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E. J. Low

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THE contemplation and study of ANIMATED NATURE excites universal interest and delight. The reason for this is obvious. The subject is, in itself, peculiarly attractive to minds of every class. The mineral and vegetable kingdoms interest comparatively but few, while all are drawn, with irresistible curiosity, to an examination of each and all of the orders of animated existence.

This universal popular interest in the subject, and the obvious advantages which result from its investigation, have led to the preparation of the following work.

Works upon this subject have, heretofore, been too elaborate, technical and expensive, or too concise and puerile, for popular use. They have been adapted, either to the critical student of Natural History, or to mere children. Hence, no full and satisfactory work upon this interesting subject, has found its way to the Homes and Firesides of the great body of our people.

This work, it is believed, supplies the deficiency. All technical names and terms have been carefully avoided; such only being used as will be readily comprehended by the general reader.

The value of works upon Natural History, largely consists in the number and accuracy of the illustrative engravings. In this respect the ILLUSTRATED ENCYCLOPEDIA OF ANIMATED NATURE is very full and accurate, there being THIRTEEN HUNDRED AND FIFTY ENGRAVINGS, exhibiting the different varieties of each of the orders described in the work, including the different races of Men, the various Beasts, Birds, Fishes, Insects, and Microscopic Animalcule of the globe.

This work, it is believed, will be acceptable to American readers, leading to a more general appreciation of the importance of Natural History, and to a wider diffusion of a popular taste for that interesting subject.

GRAND
ILLUSTRATED ENCYCLOPEDIA
OF



ANIMATED NATURE

NEW YORK AND AUBURN.
MILLER, ORTON & MULLICAN.



GRAND
ILLUSTRATED ENCYCLOPEDIA
OF
ANIMATED NATURE.

EMBRACING A FULL DESCRIPTION OF THE
DIFFERENT RACES OF MEN.

AND OF THE
CHARACTERISTIC HABITS AND MODES OF LIFE

OF THE VARIOUS

BEASTS, BIRDS, FISHES, INSECTS, REPTILES, AND MICROSCOPIC ANIMALCULA
OF THE GLOBE.

BEING A COMPLETE HISTORY

OF THE

ANIMAL KINGDOM.

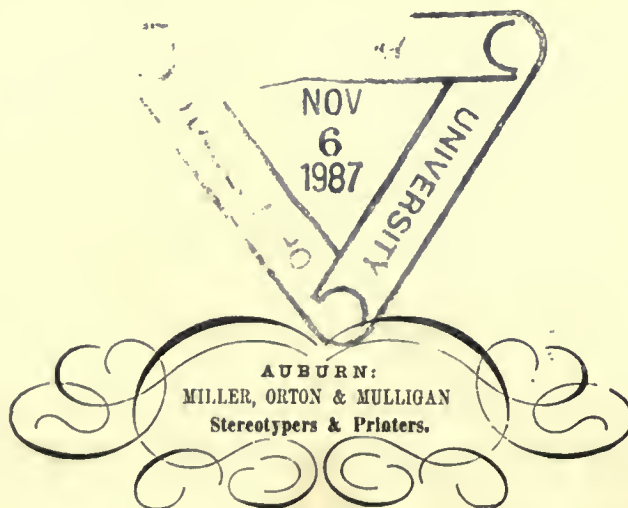
BY JOHN FROST, L.L.D.

SEE through this Air, this Ocean, and this Earth,
All matter quick, and bursting into birth,
Above how high created life may go,
Around how wide, how deep extend below,
Vast chain of being which from God began,
* * * * * Man,
Beast, Bird, Fish, Insect, what no eye can see.

EMBELLISHED WITH THIRTEEN HUNDRED AND FIFTY SPIRITED ILLUSTRATIONS,
REPRESENTING THE VARIOUS DEPARTMENTS OF NATURAL HISTORY.

NEW YORK AND AUBURN:
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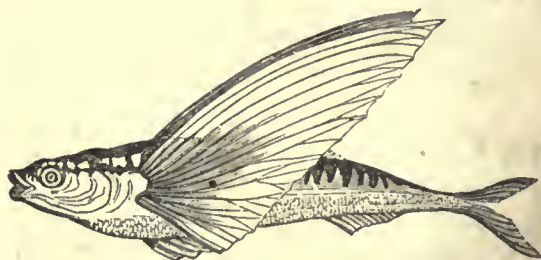
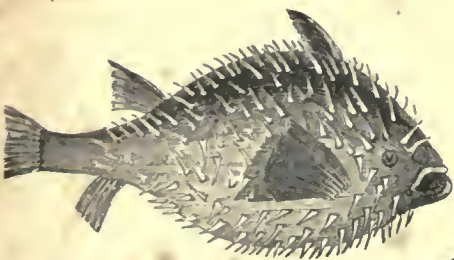
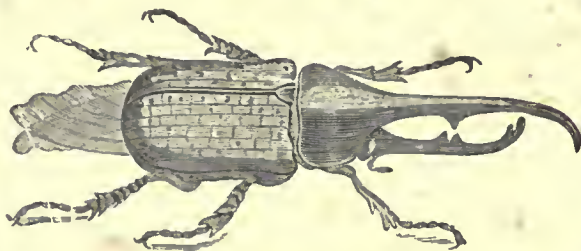
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RACES OF MEN.



Negro.

American Indian.

European.

Chinese Tartar Race.

Laplander.

MAN holds the foremost place in the order of creation. The perfection of his bodily form is as far superior to that of other beings as his intellect surpasses their instinct, beautiful and marvellous though it be. Between man and brutes there is an impassable barrier, over which man can never fall, or beasts hope to climb. Man, when fallen from his high estate, and deprived of the use of his reason, still holds his supremacy over the lower animals, and is not subject even to the most perfect and powerful brutes. There is but one genus of mankind, *HOMO*, and but one species, *Sapiens*; that is, the rational human being. Intellect, or reason, differs from instinct in its power of accommodation to circumstances; whereas instinct ever remains unchanged.

Man is modified according to the climate and position in which he is placed. There are several of these modifications, or varieties as they are called, but authors do not agree as to their number. Some describe the human family as divided into five varieties or races; the Caucasian, the Mongolian, the Ethiopian, the Malayan, and the American; each of these being subdivided into families, as for instance the Caucasian race subdivided into the Caucasian, the Celtic, the Germanic, the Arabian, the Libyan, the Nilotic, and the Indostanic families. The division generally received is that of Pickering, who enumerates *eleven races of men*, all of whom he has seen; the Arabian, Abyssinian, Mongolian, Hottentot, Malay, Papuan, Negrillo, Telingan, Ethiopian, Australian, and Negro. He differs from Prichard in several points, but especially in referring the population of America to the Mongolian race, whereas Prichard considers it as entirely separate.

The characteristics and distribution of each race are briefly these. The Arabian race extends over the whole of Europe, excepting Lapland, about half of Asia, including the greater part of India, and most of the northern third of Africa. The complexion is light, the lips are thin, the nose is prominent, and the beard thick. Number about three hundred and fifty millions. The Abyssinian race occupies a small tract towards the east of Africa, including part of Abyssinia, and part of Nubia. The features are like those of Europeans, the complexion is light, the hair is crisp, and the beard moderate. Number about three millions. The Mongolian race is remarkable for a feminine aspect in both sexes, so that a stranger is often perplexed to distinguish a man from a woman at a short distance; the hair is straight, and the beard is wanting. It extends over the eastern half of Asia, except Corea, over Lapland, and the whole of America, except the western coast by California, and the upper part of South America. Number three hundred million. The Hottentot race occupies the southern extremity of Africa. The complexion is not so dark as that of the Negro, the hair is woolly, and frequently grows in irregular patches, leaving a bald spot in



Asiatic Caucasians.



Heads of Africans.



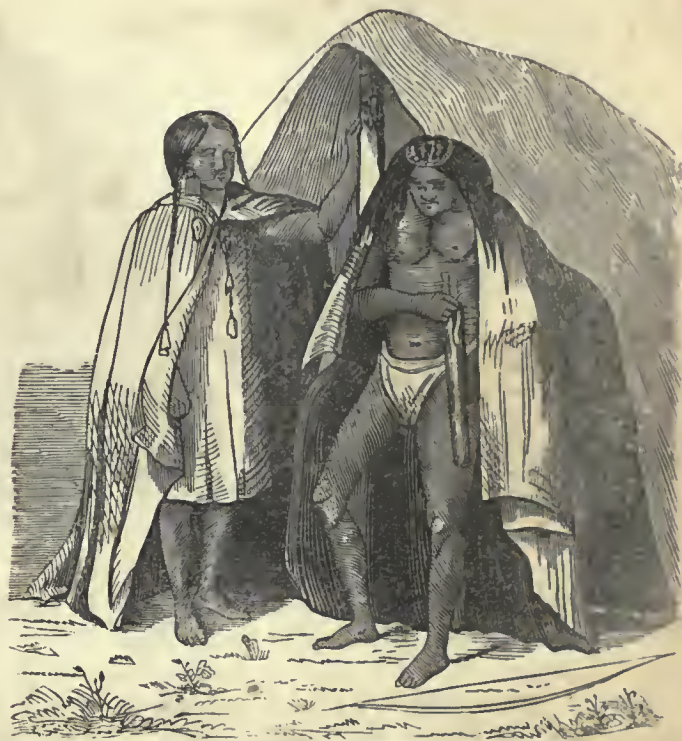
South Sea Islanders.

the centre of each patch. This race includes, Bechuanas and the Bosjesmans. The complexion of the Bosjesmans, or Bushmen, is very light, and strongly resembles that of an European, with a few sooty patches irregularly placed. Number about five hundred thousand. The Malay race is almost amphibious, and is never found inland. It is widely spread, and inhabits the centre of Madagascar, the whole of the islands in the Pacific Ocean, except the Fiji, New Hebrides, Solomon's Isles, Papua, and parts of the Philippines. The parts of America not populated by the Mongolians, are also inhabited by this race. The complexion is a dark copper, the hair straight, when cut it stands erect, and the beard is thin. Number one hundred and twenty millions. The Papuan race inhabits about two-thirds of Papua, and the Fiji Islands, where Pickering saw the only individuals of this race who came under his notice. The complexion is dark, the hair bushy, the beard copious. The most remarkable point in this race is the skin, which is astonishingly rough and harsh. Number three millions. The Negrillo race is like the Papuan in color, but the hair is more woolly, the stature is small, and the beard absent. The Negrillos inhabit part of Papua, Solomon's Isles, the northern extremities of Luzon and Sumatra, and the New Hebrides. Number three millions. The Telingan, or Indian race, inhabits the eastern parts of India, especially about Calcutta, several isolated spots in other parts of India, and the east coast of Madagascar. The complexion is dark, (best imitated by a mixture of red and black,) the skin is soft, the features are like those of Europeans, hair straight and fine, and the beard copious. Number sixty millions. The Ethiopian race is darker than the Telingan, the hair is crisp and fine, skin soft, and the features are more like European features than those of the Negro. This race inhabits the north-eastern portion of Africa, including Southern Egypt, part of Nubia, and part of Abyssinia; a few detached spots towards the north-west, and a large tract of country by Senegambia. Number five millions. The Australian race inhabits Australia alone. The complexion is like that of the Negro, but the hair is not woolly like that of the Negro. Number five hundred thousand. The Negro race inhabits the central parts of Africa, from the north of Ashanti to a little southward of Zanzibar. The complexion is black, the lips are immensely thick, the nose is flat, and the hair is close and curly, strongly resembling wool. Number fifty-five millions. The numbers given in this distribution are of course in many cases only conjectural.

The migration of the human race, or their progress from one part of the world to another, is a question of considerable difficulty. Many parts of the earth, such as islands, could not be reached without some artificial means to enable men to cross the water. This implies some degree of civilization, as boats or rafts are the result of much thought and some skill. The question is yet to be answered. Pickering has published a map containing the probable route of mankind through the earth. He appears to think that the oft mooted problem of the population of America is not very difficult of solution, as the Aleutian Isles form a chain of spots easily traversed by the skin-covered canoes which are still in use among those islands.



Fuegians.



Patagonians.

WITH respect to the distribution of the Mongolian race, Dr. Pickering says: "The Arctic Regions seem exclusively possessed by the Mongolian race; which besides is diffused through a greater variety of climates than any other, and over a far larger area. This comprises about one half of Asia, and with a slight exception all aboriginal America, or more than two-fifths of the land surface of the globe. Notwithstanding the recent encroachments, the greater portion of the American continent is still inhabited by Mongolian tribes; and while some of them wander towards the north, further than civilised man has hitherto been able to follow, others are still the nearest dwellers to the Southern Pole."

The Patagonians are not, as has been supposed, of unusually tall stature; but they appear tall from their peculiar mode of dress. They are all horsemen, but having no canoes they cannot pass the straits of Magellan; the Fuegians (inhabitants of Terra del Fuego,) do this sometimes, when they are seized and reduced to slavery.

The Southern Watermen, or the Fuegians, are far less advanced in the art of navigation than their northern brethren. Their canoes are smaller and inferior in construction. They are not known to venture forth into the open sea; and even the Falkland Islands, although so near the coast, appear to have remained unvisited by them.

The Fuegians go entirely naked, although snow is not unfrequent in their island. Still, the winters are mild, and vegetation is no where checked by a season of cold.

The Chilian aborigines have become assimilated to the Spanish in their customs and modes of living, and the races are mixed to a considerable extent.

In Peru, the aboriginal blood preponderates, but the political power is not largely shared by the original stock. Some ancient customs are retained, and the language of the Incas still continues to be spoken among portions of the Peruvian Indians.

The islands and shores on the north-west coast of America are inhabited by a maritime people, called the Chinooks, who are like the Patagonians in appearance and habits. Dr. Pickering considers them as possessing, in common with other Mongolian tribes, peculiar qualifications for reclaiming or reducing animals to the domestic state.



Chilian Indians.



Peruvian Indians.

Dr. Pickering says that the aboriginal stock so preponderates in Mexico, that the people do not regard themselves nationally as belonging to the white race. He considers himself to have positive evidence of the existence of the Malay as well as the Mongolian race among the aborigines of Mexico.

The aboriginals of the United States appear to be in every respect physically identical with their brethren west of the Rocky Mountains. They have, however, a marked superiority of stature; and they do not in point of size, fall below Europeans. Dr. Pickering says, "I have seen examples of the tribes of



Chinese Fishermen



Mexican Indians.



Malay Woman.



Malays.

the Missouri and Upper Mississippi, in the delegations which, from time to time, have visited Washington as Menomenies, Winnebagoes, Sauks and Foxes, Sioux, Pawnees, Otoes, Miamies, and Iowas."

All these tribes, as well as the Crees, Crows, Iroquois, Delawares, Seminoles, and Creeks, he unhesitatingly classes with the Mongolians, after having carefully examined their features.

The Chinese, Dr. Pickering had frequent and ample opportunities of examining, particularly at Manila. He says, "Manila was crowded with Chinese; and I was surprised at the scanty clothing of the majority of them, reduced often to the simple belt or sash, as with the Feejeeans and some Hawaiians. They had small retail shops, and were evidently the principal artisans. One of the most remarkable spectacles to a stranger, was the confined space in which they carried on, without interfering with one another, all mechanical employments. A competent judge of these matters remarked, 'that he had never seen mechanics require so little room, and at the same time do their work so neatly and faithfully.' In passing through the streets occupied by them, I repeatedly selected individuals, who, if transported in a different dress into the American forest, might, I thought, have deceived the most experienced eye. In stature they were by no means so much degenerated as the Malays, but were reported to be less cleanly in their habits.

"The upper classes of Chinese presented a very different picture, and I was much impressed with the respectability of their standing, with their general intelligence, and their ease, politeness, and refinement of manners."

The island of Borneo has not been sufficiently observed by persons interested in classifying the races to define accurately the races of its inhabitants, but it is probable that the maritime portion is chiefly Malay, while the natives of the interior are Mongolians.

The Laplanders are Mongolians, approaching the Esquimaux in appearance, and connected with the Mongols of Siberia, through the Samoiedos.

MALAY RACE.—"If the Mongolian," says Dr. Pickering, "occupies a larger portion of the surface of the globe, the Malay is yet the most widely scattered race, and in some respects, it is also the most remarkable. In institutions and social condition it exhibits, perhaps, greater variety than all the other races combined; and, from a universal, instinctive attachment to the water, it almost merits the appellation of 'amphibious.' Endowed, too, with a wandering disposition, less regardful of a home, than the rest of mankind, its march has been truly 'upon the waves;' and, beyond the Atlantic, it has reached almost every islet in the ocean that affords the least means of subsistence.

"The Malay complexion is very uniform, and is always decidedly darker than the Mongolian. I have



Women of Borneo.



Natives of the North-east coast of Borneo.

ever seen it light enough to show the least trace of a flush, nor on the other hand, so dark but that the marks of tattooing were conspicuously visible. The color may be termed reddish-brown, more nearly than in the Mongolian race, approaching the hue of tarnished copper.

"The hair seems in greater quantity than in the other races, the Papuan, perhaps, excepted; and it is straight, or at most wavy, and usually raven-black. The beard grows long, but is almost always thin, though some variety prevails in different countries. The East Indian tribes are nearly beardless; while among the Polynesians a beard is not unusual, though it does not seem to get strong till late in life."

We here present figures of the inhabitants of Australia Felix, the coast of Borneo, and the Siamese, all of whom are classed by Dr. Pickering with the Malay race. The Borneans of the coast are addicted to maritime pursuits, like the other Malays, and many of them are pirates of the worst kind. The natives of New Guinea, as well as a large portion of the inhabitants of the Pacific, and the Siamese, are also Malays.



Siamese.



A Native of New Guinea.



Japanesc.



Dyaks of Borneo, fighting.

The Japanese, Dr. Pickering describes as short, rather stout built men, with dark complexion, rather flat nose and black hair.

The people of Madagascar have very dense hair, and exhibit other obvious marks, in their personal appearance, of the unmixed Malayan.

The Tahitians are found to excel in the culinary art; and they exhibit agility and suppleness of limb.

Some of the Polynesian Malays have frizzled hair. Dr. Pickering saw specimens at Manua, the Samoan Group, and at Tongataboo.

Of the New Zealanders, Dr. Pickering says: "It is usual to represent the New Zealanders with a peculiar cast of countenance, and especially with the nose more prominent than in other Polynesians. It is true the cheeks seemed in general thinner, and the frame not so well filled out, owing, perhaps, in some measure, to the scarcity and inferior quality of the food; and I once met with an assemblage of very rugged-looking men. On the whole, it appeared to me, that there was some optical illusion arising from the peculiar style of tattooing; for, in the countenances that were mostly free from these marks, I saw only the same series of expression as at Tahiti and Samoa. In stature, however, the New Zealanders were inferior to the inhabitants of those places, and they did not, on the average, appear to exceed Europeans."

The New Zealanders are ready enough to enter into the European system of civilisation, and adopt the arts and fashions of the whites; but under the new order of things, they have been found to possess the failing of extreme covetousness. They are, besides, apt to be morose and discontented, and not very scrupulous in adhering to their bargains.



Inhabitants of Madagascar.



Canoe of the New Zealander.

Nothing so much surprises the European emigrant as the physical difference between the natives of Australia and New Zealand, two neighboring regions situated between the same parallels of latitude; the change in habits is likewise radical. The remark may be extended to the other territories of the Southern Hemisphere which are remotely detached, and are noted for their remarkable yet dissimilar natural productions; for it will be difficult to select from the human family four nations more unlike than the Australians, Austral Polynesians, Fuegians, and Hottentots. It will further be observed that they severally pursue the precise four ultimate methods of procuring sustenance, and may be classed respectively, as hunting, agricultural, piscatorial and pastoral tribes.

The "hunter state," indeed, is impossible in New Zealand, from the absence of game. By an anomalous distribution of the vegetation, the open grounds of this extensive country are almost exclusively covered with fern. There is no pasturage for grazing animals; neither, on the other hand, have any woodland quadrupeds been allotted to the forests.

Although fish enters largely into the diet of the New Zealanders, they are not an exclusively maritime people like the piscatorial tribes of America, but they are diffused throughout the interior country. Moreover, what is a little remarkable in the Malay race, they rather avoid the sea; holding, nevertheless, occasional communication along the coast.

In the management of a canoe or boat, the natives by no means fall behind their Tropical brethren, as we had many opportunities of witnessing, even in the instance of the pilot at Sidney, who had selected New Zealanders for the crew of his open boat. Unlike the Tropical Polynesians, they were not seen bathing, a circumstance attributed to the coolness of the water, but they are otherwise less cleanly in all their habits. Their huts, too, are very small and close, built of bundles of "rapoo," (Typha,) and roofed usually with leaves of the wild palm.



New Zealanders, dancing.

"The New Zealanders have always borne a warlike character; and I was, therefore, much surprised at the inefficiency of their weapons. Besides the stone mace, their principal one is a straight, sword-like club which is wielded with both hands. This is a remarkable change from the weapons of the Tropical Polynesians; for the javelin appears to be unknown, likewise the bow, and according to Mr. Hale, the sling. Their wars, indeed, do not appear to have ever been very bloody; and, notwithstanding the eagerness manifested in seeking possession of muskets, these had been used for the most part, at extravagant distances. The Bay of Islands, two years previously, had been the seat of war. Persons from distant clans were attracted to the spot, and the parties on their arrival would divide to the right and left, brother and other members of the same family, often taking opposite sides. On the restoration of peace, Pomare tribe having killed many of the Kororarika people, gave their opponents a tract of land by way of compensation.

"The soil was said to be held by the chiefs, although the consent of each member of the tribe was necessary to a sale. It appears that in the alleged sales to Europeans, the natives have not understood that they were alienating their lands absolutely; nor, if I am rightly informed, would the European view of such transactions be admitted among other Polynesians.

"Tattooing is incised, and is a much more painful operation than in the rest of Polynesia. The quantity of marking about the face seemed to be very much in proportion to the rank of the individual; each chief, however, having some variation in the pattern. It was said that in signing a document the chiefs traced this pattern on the paper, such a signature being readily recognised by all the natives who have ever seen the individual. This was the nearest approach to writing that I found among the Polynesians, and the practice appeared to be quite unknown elsewhere."—*Dr. Pickering.*

The New Zealand manufactures show skill at least equalling that of their Tropical brethren



Polynesian Malays.

Speaking of the Hawaiians, Dr. Pickering says: "From my first landing, I was surprised at the scanty clothing of many of the men and boys; their dress consisting often of a mere sash, as with the Fejecans; except only that the color was not fixed by fashion. The large-fruited variety of gourd or calabash was only seen here; and the shells were in general use, as a substitute for baskets, buckets, and chests. All burdens were carried by means of the balance-beam; and this Hindoo and ancient Egyptian method is common to all parts of Polynesia except New Zealand, but is not practised at the Fejee Islands.

"The green and pleasant aspect of many of the valleys was found to be owing to aboriginal irrigation; not, however, for the production of upland crops, but to form artificial marshes and pools for the cultivation of taro. These pools subserve a double purpose, being likewise used for keeping mullet; the young fry of which are captured along the coast, and by a course of management are brought to live in fresh water, where they acquire superior size and flavor. In the ponds nearest the coast, I have seen two other kinds of sea-fish, the Butirinus and the Dules. Fish-ponds appear to be unknown at the southern Polynesian groups.

"The most approved delicacy of the Hawaiian Islands consists of a particular breed of dog, which is fed exclusively on 'poi' (fermented taro-paste,) and is not allowed to taste animal food. Salt has been always used to cure pork and fish; in which business, in a small way, the Hawaiians rather excel; and it was observed, that they did not manifest aversion to our salted provisions, like the other Polynesians, and the Fejecans. Another novelty occurred, in the profession of the fowler; and numbers of small birds offered for sale alive, which had been captured with a species of birdlime.

"The houses are of medium size, compared with others among the Polynesians, and are closely built; having the walls and roof usually thatched with dried grass. In this climate, a covering is necessary at night; and layers of 'tapa' serve for a blanket, and are even preferred for this purpose by many European residents. The bed consists of a layer of mats; and we were shown some specimens of matting of fine texture, that had required the labor of years. A string of tutui-nuts forms a candle; in the same manner as castor beans (*Ricinus*) are sometimes employed at the Fejee Islands.

"Licentiousness prevailed at this group to a degree not witnessed elsewhere; and in the former state of society, when 'men were living with several wives, and women with several husbands,' there appears to have been really an approach to promiscuous intercourse. In all the other countries which I have visited, more regard has been paid in this respect to the indications of nature." Civilization has now improved them.



Head of a Japanese.



Native of Australia Felix.



Native of the interior of Australia.



An Australian.

DR. PICKERING says: "The Australian may be characterised in general terms, as having the complexion and features of the Negro, with hair in the place of wool.

"On closer examination, however, other points of diversity are remarked; and I think it will be very generally found that the forehead does not recede as in the Negro, an unusually deep-sunken eye giving it rather the appearance of projecting. The eye, at the same time, though uniformly small, is uncommonly piercing. With regard to other races somewhat approximating in personal appearance, the genuine hair will at all times distinguish the Australian.

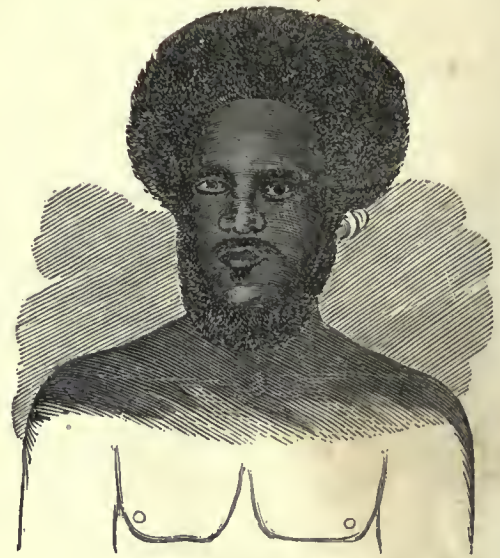
"About thirty Australians came under my own observation, who neither had the lips so uniformly thick, nor the nose so much depressed, as in the Negro; but in certain instances both nose and mouth were wider. Some individuals were of surpassing ugliness; while others, contrary to all anticipation, had the face decidedly fine; and several of the young women had a very pleasing expression of countenance. The general form, though sometimes defective, seemed on the average, better than that of the Negro; and I did not find the undue slenderness of limb which has been commonly attributed to the Australians. Strange as it may appear, I would refer to an Australian as the finest model of the human proportions I have ever met with; in muscular development combining perfect symmetry, activity, and strength; while his head might have compared with an antique bust of a philosopher.

"The Australian complexion appeared to me full as dark as that of the Negro; but I did not institute a critical comparison, neither did I see the two races in company. The hair seemed rather coarse, and instead of being perfectly straight was usually undulating, or even curling in ringlets. The head was by no means deficient, though less abundant than in the Fejeean.

"For characteristic representations of Australians, I am hardly willing to refer to any except those in Mitchell's Tour, and the portraits taken by Mr. Agate; among which latter I have been most pleased with that of Bamboro-kain. The colored figures in the French Voyages are deficient in that depth of hue which once arrests attention in the Australians."



A Fejee Glrl.



A Native of the Fejee Islands.

"THE term 'Papuan,' says Dr. Pickering, "notwithstanding some ambiguity, may be conveniently applied to a race of robust blacks, of whom the only examples I have seen, with probably one exception, have been the natives of the Fejee Islands.

"So far as my observation extends, the Papuan race differs from the rest of mankind in one remarkable physical peculiarity, the hardness or harshness of the skin. This point long since attracted the attention of those Tonga people, from whom Mariner derived his accurate notices of the Fejee Islands. It is proper to add, that I have not examined the quality of the skin in the Negrillo race.

The hair of the Papuan is in great quantity, is naturally frizzled and bushy, and so coarse as to be rather wiry than woolly. When dressed according to the Fejee fashion, it forms a resisting mass, and offers no slight protection against the blow of a club. I have had occasion to remark that it actually incommoded the wearer when lying down; and to this circumstance, rather than to any foppery, I am disposed to attribute the origin of the wooden neck-pillow. The beard does not appear to grow so long, or to cover so large a portion of the face as in the white race; but the Papuan exceeds the remaining races, in the quantity of beard.

"The complexion is of a deeper shade than in the Malay race, but it is much the same as in the Bengalee or Telingan. The features in many respects resemble those of the Negro, but the lips are not quite so thick, and the nose is somewhat more prominent; while a very general elongation of the face imparts a different aspect. I did not meet with a really fine head among the Fejeeans, but the countenance was often grave and peculiarly impressive; and I had frequent occasions to remark, that strangers did not readily forget the features of Veindovi. In average stature, the Fejeeans were found to exceed the white race; but they fell below the men of Tonga and Samoa.

"In some parts of the globe instances of cannibalism have occurred, sometimes from extreme necessity, or as a deed of savage ferocity; and we read of tribes who practise it as a ceremony, religious rite, or even as a manifestation of affection. At the Fejee Islands the custom rests on different grounds. It is here interwoven in the elements of society; it forms in no slight degree a pursuit; and it is even regarded in the light of a refinement. Instances are of daily occurrence; and the preparation of human flesh calls into requisition a variety of culinary processes, and is almost a distinct art. There are, however, degrees in the practice, in different parts of the group; and some revolting details were given, which it seems hardly worth while to repeat.

"In common with arts and attainments, the traces of cannibalism existing among the Polynesians have appeared to me referable to a Fejeean source. And it is an interesting circumstance, that this practice should not have acquired general and permanent foothold among a people so easily influenced by example."



Malay Race.—David Malo, a Hawaiian.



Negrillo Race.—An Aramanga Lad.

"THE Negrillo race," says Dr. Pickering, "has much the same complexion as the Papuan; but differs in the diminutive stature, the general absence of a beard, the projecting of the lower part of the face or the inclined profile, and the exaggerated Negro features.

"The hair also is more woolly than in the Papuan, though far from equalling in knotty closeness that of the Negro. On a direct comparison with the Negro, I have observed that the complexion appears to be rather red than black.

"One day, at Tongataboo, I observed, as I supposed, a Negro lad sporting in the midst of a group of native children. I should, perhaps, have thought nothing of the circumstance, had I not been told by a resident that he was a native of the island of Aramanga. It appeared that 'he had been brought in a trading vessel about ten years previous.' My informant, who was on board the vessel, stated, 'that the object of the voyage was to cut sandal wood, but so much opposition was experienced from the natives, that after obtaining a little the enterprise was abandoned. Beards were rare at Aramanga.'

"On invitation, the lad subsequently came on board the Vincennes, bringing a little present of fruit; and I was thus enabled to examine his features more particularly. The forehead was remarkably retreating with a horizontal sulcus or furrow, and the lower part of the face was very prominent; the lips were thick, the nose hardly as broad as in the Negro, and the eyes, though small and deeply sunk, were very lively; the cheeks were thin, and the limbs slender, with the calf of the leg high. Notwithstanding his orang features, the countenance was very pleasing, and he seemed unusually active and intelligent. Having been brought away when a child, he had forgotten every word of his native language. It was reported of him that at night, instead of seeking, like his companions, the protection of houses, he resorted to the sea-shore and buried himself in the sand.

"Captain Vanderford once visited Aramanga; and in circumnavigating it, 'attempted at various points to open communication with the natives; but he could get nothing from them, except a spear or a stone. They were the most singular looking people he ever beheld, and appeared to him rather like monkeys than men.' The last expression will be found to be nearly identical with the terms used by Forster, in speaking of another island of the same group."

"The Andaman islanders, from the concurrent accounts, may be referred to the Negrillo race, which seems also to be present in the Malayan Peninsula, if not in Sumatra. On the other hand, Dr. Dickenson heard nothing of Negrilloes in Borneo; they appear to be equally absent from Celebes and Mindanao, where the interior is occupied by Harafora tribes, and from Java, where the population is comparatively advanced. Indeed, the geographical distribution sufficiently indicates that the Negrillo race once occupied more space than it does at this time, and that in many instances it has preceded the dissemination of other races



A Hindoo Girl.



A Hindoo Silversmith.



A Hindoo Goldsmith.

"THE Eastern Hindoos," says Dr. Pickering, "those at least who make visits to the East India islands, present great uniformity in their personal appearance; and, in this respect, they agree with the tribes and nations situated to the eastward of Hindostan.

"The complexion is much the same as in the two preceding races, and is so decidedly darker than in the Malayan, that by common consent it is called black; although, on comparison, the hue differs widely from that of the unmixed Negro. The true color may be formed by mixing red and black; and in reference to the use of the term of 'purple-brown' and that of 'olive,' it should be observed that neither blue nor green enter into any variety of human complexion.

"The features approximate very closely to those of the white race; but in general the mouth appeared to be wider, the nose rather less prominent, and the lips sensibly thicker. The profile was observed to be less vertical than in the surrounding Malays; the lower part of the face projecting with a regular arch, as in the Mongolian; and there was a further correspondence with the latter race, in the frequent instances of the arched nose.

"The skin was ascertained to be very soft. The beard occurred more frequently, and was decidedly more copious than in the Malayan race. The hair was straight and fine, and I have never seen it of any other color than black. I have not met with Albinos in the Telingan race.

"I am unable at present to refer to a characteristic portrait of the Telingan race; most of the published figures of Hindoos having been taken either from the white race or from mixtures.

"Lascars' usually enter into the composition of the crews of Anglo-Indian vessels, and they thus reach Manila, where I once met with four or five of them in the streets. I did not, however, hear of any who were permanently settled at the Philippine Islands.

"At Sooloo, I saw two Lascars; who had been brought there equally though indirectly through the agency of Europeans, and were held in a state of captivity. As they stood in the midst of the native population, the 'hatchet-face,' the more prominent nose, and darker complexion, rendered them quite conspicuous.

"At Singapore, on the other hand, the Hindoos had principally arrived by their own means of emigration, in the manner described by Crawford and others. Next to the Chinese, they formed the most considerable part of the population; and, like them, they were mere visitors, bringing no women with them, and purposing to return after a series of years. A large proportion were from Peninsular India, and were called 'Telinga people,' or, more commonly, 'Klings.'

"Coming, as we did, from among the tribes of the further east, the transition to the Hindoos and Chinese was very striking. Not on account of the costume, which continued, in many instances, as scanty as



A Goorka Chief.



A Hindoo Diamond Cutter.



A Begging Fakir.

in the Pacific; while the dances, shows, and processions might have passed for mummeries; but these have accompanied all the substantial advantages of civilisation, laws, civil order, security of person and property from a period anterior to the rise of Greece and Rome. We were looking upon people who have remained essentially the same throughout the revolutions which have befallen other nations, and upon ceremonies that, for aught we can see to the contrary, may yet be destined to survive the institutions of Europe and the West.

“While we were at Singapore, a play was performed by the Hindoo workmen residing on Mr. Balestier’s plantation. In the music I remarked a similarity to the Spanish airs heard on the western coast of America, but I should hardly have ventured an opinion on this point, had not Mr. Rich, who passed his earlier years in Spain, recognised the identity. The connexion may probably be established through the Muslims, but I must leave it to others to decide upon the relative claims of priority.

“A ‘clown’ was in attendance, whose sayings and pranks appeared to be much relished. This custom has even reached the Feejee Islands, but it does not occur upon the Chinese stage. The regular acting consisted principally of singing and dancing conducted in the open air, and, to one unacquainted with the language, was rather monotonous. But the style of the gilded head-dresses seemed to resuscitate the Egyptians of antiquity; and even the ‘vulture cap’ was present upon the head of one of the actors.

“A Bramin, on account of some difficulty, was residing at Singapore; and as the hereditary growth of the nobility of Europe was comparatively ephemeral, I examined with some interest his personal appearance. The complexion was the same as in the low caste of Hindoos, and the countenance might not have attracted notice in the street; but the mouth was small, the lips thin, and the facial angle approached unusually near to ninety degrees. The latter circumstance was not perceived in another Bramin belonging to the Telingan race, who was subsequently seen at Bombay, though in both the lobe of the ear was broader than usual; and, contrary to a custom which occurs among various uncivilised tribes, as well as in the Cutch Banians, and in representations of Hindoo deities, it was not perforated.

“The Bramin first mentioned was very affable, spoke English correctly and fluently, and was ready to answer any question in relation to his religion, or to go into an argument in its defence. He stated that ‘Braminical religion can only be inherited; that caste, when once lost, cannot be regained, either by the individual or by his descendants; that Bramins would lose caste by partaking of animal food, or by the commission of any immorality; and that a Bramin could leave his own and enter either of the inferior castes.’ The system of thus visiting the sins of the parent upon the children seems intended to offer the utmost inducements towards leading a pure life, whatever may be said of the selfishness of the principle. The reported national failings, however, tempt us to suppose, that lying and pecuniary offences can hardly be mentioned in the Braminical code. The Bramin further asserted that the burning of widows continued to be practised in Hindostan, at least among the upper classes.”

NEGRO RACE.



Women of Kanembo and Soudan.



A Bechuana.



A Bush Girl.

"At the present day," says Dr. Pickering, "the personal appearance of the Negro is generally familiar; and the thick lips, flattened nose, retreating forehead, close, woolly hair, and dark complexion, have become proverbial. The Negro appears to exceed all other races in depth of hue, and in the close, woolly texture of the hair is rivalled only by the Hottentot. The absence of rigidity and of a divided apex in the cartilage of the nose is a character common equally to the Malayan, and, probably, to some of the other races.

"In the case of two Albino children, the Negro aspect had so entirely disappeared, that they might have passed for the children of Europeans, but for the remarkable appearance of the hair, which I could only compare to white fleece.

"The Negro race seems to occupy about one half of Africa, and, excluding the northern and southern extremes with the table-land of Abyssinia, it holds all the more temperate and fertile parts of the continent. These limits, to all appearance, would not have been exceeded to this day, aside from foreign interference; but, as one consequence of the events of the last two centuries, the Negro race seems destined to fill hereafter an important place in general history.

"Negroes are now to be found in most parts of the globe where Europeans have established themselves.

"During a week spent in different parts of the island of Madeira, I met with no Negroes, except at the port of Funchal; and the few individuals seen at this place may have been connected with the foreign shipping.

"On the other hand, the population of the Cape Verd Islands, judging from our hasty visit, appeared to be principally composed of Negroes; and they were living in a very rude state for the subjects of a civilised government. They, however, exhibited a certain air of independence, not seen in the same race in the United States.

"Brazil had more of the aspect of a European colony, although Negroes formed the most numerous class of the population of Rio Janeiro and its environs; and instances of even mixed descent were comparatively rare. Most of these Negroes were slaves; but very many were employed as soldiers in the military police. Others held places of honor and trust under the government; and one man was spoken of, as being distinguished for his abilities as an advocate. Several of the women, too, moved, with their Portuguese husbands, in the first circles of society.

"I was careful to look among the imported Negroes for traces of some different race; but I was unable to detect any; neither have I met with more success in other parts of America. A second race may have been sometimes included in the importations from Madagascar; but otherwise, I think instances have been extremely rare; prior at least to the recent introduction by the English of people of Hindostan.

"There are, perhaps, fewer Negroes in Chili than in any other Europeanised portion of America. I do not remember seeing more than ten or twelve, during the eighteen days I spent in Chili, chiefly at the cities of Valparaiso and Santiago."



A Kaffre Man.



A Griqua Woman.



A Kaffre Woman

The Kaffres, next to the Hottentots, are the most important class of natives with which the colonists of South Africa have intercourse. The term Kaffre, or Kaffir, signifying infidel, is applied by the natives of North Africa to those of the south-east who are not Mohammedans, and by the Europeans of the Cape it is usually used to designate the Amakosa, Amatembu, and Amaponda tribes, which live on the colonial frontier. These tribes derive their origin from one common stock. They are possessed of far more energy than the Hottentots in their best days, and are in a higher grade of the pastoral state, adding the cultivation of maize, millet, water-melons, and a few other esculents, to their occupation as herdsmen, and storing up grain for future consumption. They live in kraals of from ten to twenty families, under a subordinate chief; a certain number of kraals acknowledging a chief of higher rank as their head. The chiefs are jealous of their dignity. They possess a few privileges which enable them to maintain a certain degree of importance; thus they claim offering as first-fruits, a share of the cattle slaughtered, and other privileges. Wars occur occasionally, and chiefly arise out of disputes about pasture-grounds. Their arms are a javelin, a short club, and a large shield made of hide. The existence of a Supreme Being is acknowledged, but they pay him no religious worship, and possess no idols. Their ideas of a future life are vague and indistinct; but they believe, nevertheless, in spirits and apparitions, to which they sacrifice animals. They are excessively superstitious, and the Amakira, a prophet or witch-doctor, or rain-maker, exercises a most pernicious influence over them. Individuals are put to death at the instigation of these characters, and the prophet shares with the chief in the property of his victim. Some of the chiefs also pretend to have the power of procuring rain; and if their predictions are verified they take the credit to themselves, but if they fail they attribute the result to the wickedness of the people. One of the most important of their rites this people have in common with the Jews, and its origin is one of the most interesting points in their history; but they themselves can give no account of its introduction. They do not eat swine's flesh, nor fish, excepting shell-fish. They have no canoes. The right of property in the soil is limited to that only which is under cultivation; but the right of pasture is held in common by each kraal. Long established principles and usage serve as a substitute for written law.

The huts of the Kaffres resemble bee-hives in shape, and are usually from eighteen to twenty feet in diameter, and from six to seven feet high. Poles are stuck in the earth, and boughs are wattled in the interstices and made to arch over at the top. They are thatched with straw and plastered with cow-dung or clay. The fire is placed in the centre, without any aperture but the doorway for ventilation. The door



Kaffres on a March.

is formed of basket-work. A few mats, coarse earthenware pots, of native manufacture, made of the fine clay taken from deserted ant-hills, a rush-basket, so closely woven as to retain liquids, and a wooden bowl or two, constitute the sole furniture of these simple dwellings. Milk is preserved in skins, and is not used until thick and sour, when it is more nutritious. The kaross, or cloak of sheepskin, rendered soft by currying, forms the dress of both sexes. The chiefs wear a leopard's skin by way of distinction. The females wear a covering of hide. The personal appearance of the Kaffres is pleasing. Lieutenant Moodie, in his "Ten Years in South Africa," says, "They are elegantly formed, and so graceful that they appear to be a nation of gentlemen. In their manners they are respectful without servility, and possess a native delicacy which prevents them from giving offence by word or action." The accounts of their personal appearance are generally supposed to be rather exaggerated; but there can be little doubt, from the favorable testimony of many travellers, that their appearance and carriage are really prepossessing. Pringle says, "The Caffres are a tall, athletic, and handsome race of men, with features often approaching to the European or Asiatic model; and excepting their woolly hair, exhibiting few of the peculiarities of the Negro race. Their color is a clear dark-brown; their address is frank, cheerful and manly." The women are not so good-looking as the men, owing to the labors which they undergo. The men will inclose their patches of ground, and milk the cows, but the actual cultivators are the women, who likewise construct their huts. Polygamy is common, but it is confined to the most wealthy, as the wives are always purchased by cattle. The women take their meals apart from the men. The custom of polygamy is believed to be of recent origin, and arose out of the number of unprotected women which followed a war in which great numbers of males were killed. The Kaffre language is soft and copious, but the native airs are tame, and not to be compared to those of the Hottentots, whose language, however, is far less agreeable. Though prudent and economical, the Kaffres are exceedingly hospitable. Cattle are, generally speaking, only killed on the occasion of marriages or other festivities.



A Bisharee Woman.



Ethiopians.

"THE Ethiopian race," says Dr. Pickering, "is in some measure intermediate in personal appearance between the Telingan and the Negro. The complexion, too, seems generally darker than in the Telingan race, holding the third rank in depth of hue. The hair is crisped, but fine in its texture; and I have never seen it wiry, as in the Papuan; from which latter race the Ethiopian differs, in having a soft skin and European-like features.

"Various modern travellers have been struck with the resemblance of the Ethiopian to the Telingan race. The same circumstance was noticed in ancient times by Herodotus, who also speaks of the remarkable beauty of those living south-west of Arabia; an opinion in which, from actual observation, I am now prepared to concur.

"The Ethiopian race occupies the hottest countries of Africa. Most of its tribes are purely pastoral; and some of them are, perhaps, alone acquainted with all the recesses of the Great Desert. The only portions of the race that are known to lead an agricultural life are the Nubians of the Nile, and some of the tribes bordering on the table-land of Abyssinia.

"Characteristic portraits of Ethiopians may be found in various works on Egypt and Nubia; and I would refer particularly to the figures given in Hoskin's Travels on the Upper Nile.

"The Ethiopian race was not seen in its purity during the voyage of the Exploring Expedition, but it was doubtless present among some of the mixed Arabs at Singapore. My acquaintance with it commenced on the day of my landing in Egypt."

Dr. Pickering had opportunities of examining the Nubians. He ascended the Nile, and observed the Barabra of the Nile, and the Barabra of the Desert. Among the latter are the Bisharee tribe. Of them he says:

"In returning down the river, I fell in with the Shekh of the Ababdeh, who was reported to hold authority likewise over the Bishareen. His personal appearance was indicative of mixed Arab descent, but I did not learn the history of his family. He wore a turban, in consequence, as he said, of being on his way to Cairo; but he intended on his return, to dress his hair after the fashion of his own country. He was well acquainted with Soakin, where he had seen some of the Somali; and he spoke of the Kostan, as being an extremely troublesome and ferocious people. He was particularly desirous of ascertaining why Europeans came so far to look at antiquities; and on learning that hieroglyphic characters could be read, he considered himself in possession of the secret.

"The Bishareen dwell in the district to the southward of the Ababdeh, and situated in like manner eastward of the Nile. Two individuals seen at Assouan enabled me to identify the physical race. One of them wore a pin for dressing the hair, similar to the Fejeean, but shorter and curved."



Hottentots, preparing to remove their Dwelling.

"I AM not sure," says Dr. Pickering, "that I have seen Hotttentots of pure race; and in the following account I am obliged to rely in part on published figures and descriptions of them. Eye-witnesses uniformly agree in regarding the Hotttentot as differing in physical race from the Negro, and they refer to the diminutive stature and the light complexion; the latter, in some well authenticated instances, having even been known to exhibit a flush.

"Both races seem to be alike in the texture of the hair, which is more closely woolly than in the rest of mankind; and to agree also in the general style of feature. But many travellers describe the Hotttentot countenance as being to a marked degree peculiar.

"I have found many points of interest in the Hotttentot character, as portrayed by travellers, who universally bear testimony to the faithfulness, efficiency, and courage of their guides in trying situations, amid the dangers of this difficult and desolate country. Unlike many wild tribes, the Hotttentot did not shrink before the advance of Europeans; but readily adopting the habits of civilization, these people have ever proved active and useful assistants of the colonists, their history in this respect contrasting strongly with that of the neighboring Kaffre tribes. Indeed, the advantage of the Hotttentot character appears to have contributed essentially to the admission of Europeans into this, the only part of Africa that has proved accessible to foreigners; and the benefit deserved a better return than unequal legislation."

Recent discoveries have shown that the Hotttentot race is more widely diffused than was previously supposed.



A Bu-hman Lad.



A Bushman, armed for an Expedition.



A Bushman.

The Bushmen are the remains of Hottentot tribes, and consist of wandering hordes who were once in the pastoral state, but have again become hunters, having been robbed of their flocks and herds by the colonists, and driven to remote districts for safety. They are now wholly destitute of flocks, living in constant alarm in inaccessible rocks, and changing their residence frequently, lest their haunts should be discovered. A hole dug in the earth, and covered with a mat raised on a couple of sticks, often forms their habitation. The parties who wander over immense tracts of country are unconnected with each other; even oppression has not united them, but a long course of cruelty has exasperated them against all mankind. It has been said that they have an uncontrollable aversion to civilization; and yet, by those who have studied their character, they are represented as by no means deficient in intellect; bold and skilful hunters; not indisposed for instruction; susceptible of kindness; grateful; faithful in the execution of a trust committed to them. Not only did the Bushmen feel the savage system of commandoes, but they were murdered by the Cape-Dutch with the utmost coolness. The Bushmen missions are represented as having been attended with some valuable results. Some of these natives of the wild desert had begun to handle the spade and the sickle, to raise Indian corn, pumpkins, water-melons, beans, &c. The mission by which these changes had been effected was put down by Colonial Government in 1816. The Bushmen maintained their position for two or three years; but oppression at length drove them into the deserts, and the country was given to the boors.

The Griquas are a race of mulattoes, whose ancestors were the offspring of colonists by Hottentot females. Treated as an inferior class by those of kindred race, and prevented from acquiring property, they gradually established themselves amongst the tribes beyond the Great Fish River, where their numbers were augmented by refugees and intermarriages with the females of surrounding tribes. Forty years ago they subsisted by plunder and the chase, but the missionaries have met with much success in their attempts to improve them. The country they inhabit is not well adapted to agriculture.



Abyssinian Women.



A Native of Abyssinia.

"I HAVE seen," says Dr. Pickering, "but few genuine Abyssinians, and these few have not presented among themselves a very uniform personal appearance. In a general way the race may be said to possess European features in combination with crisped or frizzled hair. The complexion, however, though it is often very light, does not appear ever to become florid.

"The race seems to be confined to the table-lands of Abyssinia, and to its prolongation in a mountainous tract that extends towards the interior of the continent; but even within these limits there appears to be a large infusion of Ethiopians belonging to the Galla tribes. The Abyssinians having been converted during the early ages of Christianity, continue to make pilgrimages to Jerusalem; but otherwise, their presence in foreign countries is for the most part, involuntary.

"My first interview with Abyssinians took place at Singapore; where, on entering one of the principal shops, I was greatly surprised to find its three occupants differing in physical race from all the men I had previously met with. The wonder increased on perceiving their superiority in refinement and intelligence over the other Orientals around; and that although so unlike, they did not on these points, seem to fall below Europeans.

"The hair was much alike in all three, and was crisped and fine, neither coarse enough nor in sufficient quantity to form a resisting mass. The beard of one individual was in pellets, absolutely like the close wool of the Negro; but the prominence of nose, greater even than usually occurs in the white race, bore sufficient testimony to his purity of descent. The second individual had the face very much elongated, but the nose was not particularly prominent. The third individual had a straighter beard, which was black and grey in regular stripes. The complexion was the same in all three, and though very light, was by no means of a sickly hue; and, indeed, these persons might readily have been passed in the street as belonging to the white race.



Europeans.

"EUROPEANS and European colonists are comparatively uniform in their complexion and personal appearance, and they can hardly conceal their origin by dress, even amid the population of Northern Africa and North-western Asia. The inhabitants of the two last named countries present among themselves more diversity, although at the same time there is rarely any difficulty in recognising the physical race.

"The White race then, as it exists in northern climates, may be characterised by its superiority in lightness of complexion, in thinness of lip, in prominence of nose, and in length and copiousness of beard. No one of these tests is of itself sufficient to distinguish the race, for Abyssinians, in some instances, rival it in prominence of nose; Telingans, or even Ethiopians, in thinness of lip; many Papuans have as copious a beard; and I have myself seen the florid complexion among Mongolians of high northern latitudes. So far, however, as my observation has extended, flaxen hair, red hair, and blue eyes, (Albinos being excepted,) are found only in the White race.

"The hottest portion of the globe appears to be about seventeen degrees in width, counting from latitude 27° north, and extends from the Atlantic Ocean to the Ganges. One third, perhaps, of this immense tract is inhabited by the White race, although often under a physical aspect that would not readily be acknowledged by Europeans. The complexion, always dark, is in frequent instances sufficiently so to conceal a flush; indeed the Malay-brown complexion seems rather to predominate; and I have seen Arabs of a deeper hue who yet were apparently of unmixed descent; moreover a considerable proportion of the inhabitants of Southern Arabia are nearly or quite beardless. In short the White race is here protean or polymorphous, and exhibits a diversity in feature and complexion that I have not found in the other races. The prominence of profile is, however, for the most part permanent; and I further remarked that the various series of expressions of countenance, which pertain respectively to the other races, appeared to be absent. It should be observed, however, that actual mixtures of race have been more frequent and more complicated in the southern Arab countries, and have been taking place there for a longer period, than in the other parts of the globe.



Arabians.

"While acknowledging that we are only beginning to be acquainted with the countries and people of the East, I have been impressed with one view of the circumstances, in correspondence apparently with an ancient condition of the human family. In the course of my recent tour, I was continually hearing from the lips of Orientals the words of different ancient and modern European languages, until at last the whole class of these languages seemed as if merely recomposed from fragments of Arabic and Sanscrit. Of fragments indeed, which have been disguised more or less by interchanges during some thousands of years; and if any European words can be traced to a different source, they at least remain to be pointed out.

"The same state of things appears to exist in the Malay class of languages, and instances have been discovered of English words which can be traced through the Sanscrit to the remotest islands of the Pacific. The rule may, perhaps, be further extended to the languages of the African continent; but whether applicable in any degree to the Chinese, or to the aboriginal American languages I am uninformed.

"At the present day the White Race may be conveniently disposed in two divisions, as well geographical, as differing in institutions and habits of life; the Frank or European, and the Oriental. The extraordinary intensity of heat, in some of the countries inhabited by the White race, may help to explain a portion of these differences.

"One of the above divisions may in some measure be said to rule the land as the other rules the sea; for the extent of the caravan routes is almost equivalent to the universal maritime intercourse now attained by Europeans."—*Dr. Pickering.*

In the foregoing account of the races of men, it will be observed that I have quoted nearly the whole from Dr. Pickering's work on that subject. This I have done, not because there were not abundance of other writers on the subject, at the disposal of a compiler, but because I consider him the final authority. He is the most recent and exact of all writers on the races, and his system is founded on actual observation.



The Chimpansee.

THE section Quadrumana includes the Apes, Baboons, and Monkeys. The name of Quadrumana is given to these animals because, in addition to two hands like those of man, their feet are also formed like hands, and are capable of grasping the branches among which most monkeys pass their lives.

The Chimpansee and the Orang-outan have been confounded together by the older naturalists, whose error has been repeated even to the present time. That they are really distinct animals a glance at the skull of each will at once prove. The Chimpansee is a native of Western Africa, and is tolerably common on the banks of the Gambia and in Congo.

Large bands of these formidable apes congregate together, and unite in repelling an invader, which they do with such fury and courage that even the dreaded elephant and lion are driven from their haunts by their united efforts. They live principally on the ground, and, as their name imports, spend much of their time in caves or under rocks. Their height is from four to five feet.



The Orang-Outan.

The Orang-utan inhabits Borneo and Sumatra. In Borneo there are certainly two species of Orang, called by the natives the Mias-kassar and the Mias-pappan. Some naturalists suppose that the Sumatran Orang is also a distinct species.

This is the largest of all the apes, as it is said that Orangs have been obtained from Borneo considerably above five feet in height. The strength of this animal is tremendous; a female snapped a strong spear asunder after having received many severe wounds. Its arms are of extraordinary length, the hands reaching the ground when it stands erect. This length of arm is admirably adapted for climbing trees, on which it principally resides. The rude hut which they are stated to build in the trees would be more properly called a seat, or nest, for it has no roof or cover of any sort. The facility with which they form this seat is curious. Mr. Brooke, the Rajah of Sarawak, says: "I had an opportunity of seeing a wounded female weave the branches together, and seat herself in a minute. She afterwards received our fire without moving, and expired in her lofty abode, whence it cost us much trouble to dislodge her." The Pappan is justly named Satyrus, from the ugly face and disgusting callosities.

When young the Orang-utan is very docile, and has been taught to make its own bed, and to handle a cup and saucer, or a spoon, with tolerable propriety. For the former occupation it proved itself particularly apt, as it not only laid its own bed clothes smooth and comfortable, but exhibited much ingenuity in stealing blankets from other beds, which it added to its own. A young Orang in a zoological collection evinced extreme horror at the sight of a small tortoise, and, when the reptile was introduced into its den stood aghast in a most ludicrously terrified attitude, with its eyes intently fixed on the frightful object.



Female Orang-utan.

The accompanying engraving is a portrait of the interesting animal which was formerly an inmate of the Surrey Zoological Gardens; it is shown in an attitude which displays its mode of action in a state of nature.

The animal is one of four which were brought in a trading vessel to Calcutta, where they were purchased and shipped for England. Its height, from the top of the head to the heel, is two feet two inches, and its weight does not exceed fifteen pounds avoirdupois. The fore limb, from the shoulder to the end of the middle finger, measures the extraordinary length of one foot nine inches; and the length of the hand alone, from the wrist to the tip of the middle finger, is six inches and a half. The palm of the hand measures three inches and a half; the sole of the foot five inches; and the width over the breast is nine inches.

This animal exhibited an indifference to food not usual with her congeners. A visitor of the Gardens says, "She did not deign to hold out her hand for some fruit that was offered. At last she accepted a large strawberry, and held it with great indifference in her fingers for about five

minutes: our attention was then diverted for a moment to the Satyr; and in the interval the strawberry had disappeared. She also drank some milk, but without much apparent appetite."



Orang-utan.
(33)



Hunting the Orang-utan.



Red Monkey.



Female Orang-utan of the Zoological Society's Collection, London.

From the account of a visiter, we extract the following passages in relation to a female Orang-utan, exhibited in 1838, in the collection of the London Zoological Society.

"Dressed in its Guernsey jacket and trousers, a sort of clothing which it needs in our climate, its appearance, seated on its chair, or at the table with its keeper in his private room, is very amusing; nor less so the expression of its countenance, when soliciting a share of the food before it: it looks at its keeper, looks at the tempting morsel, and protrudes its flexible lips into the form of a conical proboscis; when offered any liquid to drink in a cup or saucer, it does not, however, dip its lips into the fluid, but holding the cup in its hand, puts the rim between its lips and so drains up the contents, exactly as a child would do under similar circumstances, and with all due gravity and decorum. Though this animal is naturally and habitually dull and inanimate, it has its times of sportiveness, when it readily engages in play with those to whom it is attached, and courts their notice."



Group of Monkeys.



Group of Monkeys.



A Barbary Ape.



Coaita.



Collared Tee Tee.



White-nosed Monkey.

The Coaita is one of the Spider Monkeys, so called from their long slender limbs, and their method of climbing among the branches. The tail seems to answer the purpose of a fifth hand, as it is capable of being used for every purpose to which the hand can be applied. In climbing among the branches of trees, they coil it round the boughs to lower or raise themselves, and often will suspend themselves entirely by it, and then by a powerful impetus swing off to some distant branch. They are extremely sensitive to cold, and when chilly are in the habit of wrapping their tail about them, so that this useful organ answers the purpose of a boa as well as a hand. They will also, when shot, fasten their tail so firmly on the branches, that they remain suspended after death. The Coaita inhabits Surinam and Guinea.

The Collared Tee Tee, or White-throated Squirrel Monkey, is found to the east of the Orinoco. It lives on small birds, insects and fruits. Its habits are, apparently, mild and inoffensive, but its acts belie its looks, for when a small bird is presented to it, it springs upon its prey like a cat and speedily devours it.

The White-nosed Monkey is a native of the forests of Guinea. The lightness and agility of its actions, its playfulness and its beauty, render it very attractive; but it is not without a mixture of the caprice and petulance of its race. Its general color is black, the nose, which is broad and elevated, being white from between the eyes to the nostrils.

The Mandrill, which is the most conspicuous of the baboon tribe, is a native of Guinea and Western Africa. It is chiefly remarkable for the vivid colors with which it is adorned. Its cheeks are of a brilliant blue, its muzzle of a bright scarlet, and a stripe of crimson runs along the centre of its nose. It lives principally in forests filled with brushwood, from which it makes incursions into the nearest villages, plundering them with impunity. On this account it is much dreaded by the natives, who feel themselves incapable of resisting its attacks. It is excessively ferocious, and easily excited to anger; indeed, Cuvier relates that he has seen several of these animals expire from the violence of their fury.



Female Coaita and young.



Group of Monkeys.



Mandrill, or Ribbed-nose Baboon.



Agile Gibbon.



A Baboon.



Marmoset.



Ursine Howler.

The Guereza is a native of Abyssinia, where it lives in small families, tenanted the lofty trees in the neighborhood of running waters. It is active and lively, and at the same time, gentle and inoffensive. Its general color is black, the sides of the body and top of the loins being ornamented with a mantle or fringe of long white hairs.

The Agile Gibbon is a native of Sumatra. It derives its name of Agile, from the wonderful activity it displays in launching itself through the air from branch to branch. They spring a distance of twelve to eighteen feet with ease. The height of the Gibbon is about three feet, and the reach of the extended arms about six feet.

The Howling Monkeys are chiefly remarkable for the peculiarity from which they derive their name. They possess an enlargement of the throat, which renders their cry exceedingly loud and mournful. They howl in concert, principally at the rising and setting of the sun. They feed principally on leaves and fruit; the tail is prehensile.



Chimpanzee.



Guereza.



Bonneted or Pig-faced Baboon.



Chacma, or Pig-faced Baboon.



Wanderoo.



Chacma, walking Erect.

The Chacma, or Pig-faced Baboon, is a native of South Africa. It is an animal of very considerable strength, and attains, when full grown, the size of a very large Newfoundland dog. On level ground it always goes on all-fours; but among the rocks and precipices, which are its natural refuge and habitation, it uses its hinder feet or *hands* somewhat as a human being would do, only with inconceivably greater boldness and agility, in clambering up the crags, or in springing from cliff to cliff.

The Bonneted Monkey is so called from the peculiar manner in which the hair of the upper part of its head diverges, a form not unlike the object to which it is usually compared—the round bonnet of a Chinese. Its native country is the east of Asia.

The White-eye-lid Monkey, has a long, black, naked, and dog-like face; the upper part of the eye-lids of a pure white, which distinguish it from most other species.

The Wandaroo is found on the coast of Malabar and in the island of Ceylon. Its hair is of a deep black with the exception of the long beard, which surrounds the face like a ruff.

The Mona Monkey inhabits Barbary, Ethiopia, and other parts of Africa. The term Mona is of Asiatic origin, and is the Moorish name for all long-tailed Monkeys.



White Eye-lid Monkey.



Mona Monkey.



Marmozets.

The Marmozet is a most interesting little creature. It is exceedingly sensitive to cold. It will eat almost any article of food, but is especially fond of insects, which it dispatches in a very adroit manner. Its native countries are Brazil and Guiana.

The Diana Monkey, so called from the fancied resemblance of the crescent-shaped bar which ornaments its brow to the ancient poetical representations of the goddess of the silver bow, is a native of Guinea, Congo, and Fernando Po. It is one of the most graceful and good tempered of its tribe. It is fond of being caressed, and nods and grins with peculiar expression when pleased; but after a certain age it becomes more sedate and seldom indulges in these antics.



Diana Monkey.



Chimpanzee.



Orang-Outan.



Common Baboon.



Common Monkey.



A Pinche.



Full Bottomed Monkey.



Proboscis Monkey.



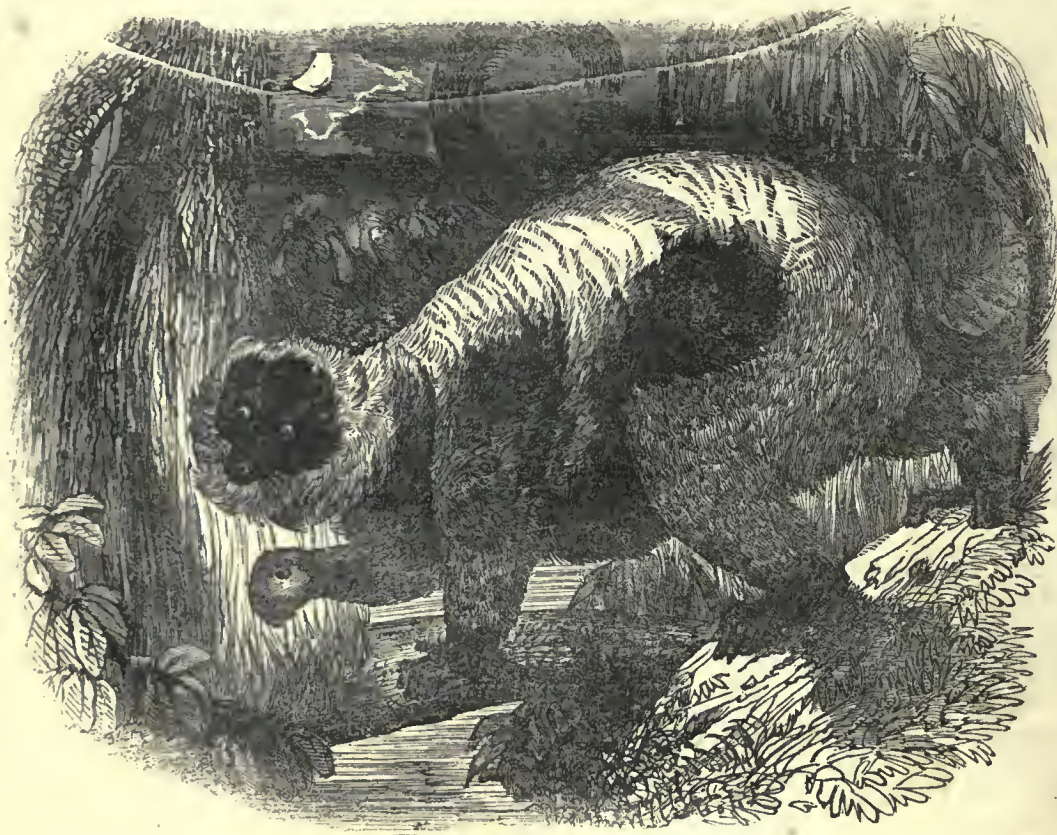
Barbary Ape.

One of the most curious of African Monkeys is the Full Bottom, so called from the resemblance of the hair about his head to a full bottomed wig. It is very handsome. The head and upper part of the body are covered with yellow hair, falling over the shoulders and forming a kind of hood and pelerine. The face is brown, and the rest of the body is covered with very short close hair of a jet-black color which sets off the snow-white tail, which is much longer than the body and not prehensile. It lives in the forests of Sierra Leone, where the natives give it the name of the "King of the Monkeys," apparently, says Desmarest, on account of the beauty of its colors, and its "camail," which represents a sort of diadem. They attach great value to its fur, of which they make ornaments, and apply it to various purposes.

The Barbary Ape, which grows to the height of nearly four feet, is remarkable for docility, and, by force of discipline, is made to exhibit considerable intelligence. Its general color is a palish olive-brown; the face is a swarthy flesh color. It is common in Barbary and the lower parts of Africa, and is also found in considerable numbers on the Rock of Gibraltar. This species was well known to the ancients, and it has been the "showman's ape" from time immemorial. Though morose and sullen in confinement, it is represented as social, active and courageous in its wild state, and is particularly distinguished for its attachment to its young.

The Pinche is found in great numbers in Colombia, South America. It is a small animal, (which is indeed the character of the genus,) being only about seven inches long in the body, but having at least twelve inches of tail. One of the most remarkable traits in the appearance of Pinche is the very long white hair on the top of the head, which falling backwards and laterally, forms a complete hood. All the under parts of the body and the insides of the legs are also white. The outsides of the legs, the buttocks and the basal half of the tail, are bright rusty red; and the terminal half of the tail is black. The back is covered with black hairs having yellowish olive points.

The Proboscis Monkey is a native of Borneo. It is remarkable for the extraordinary size and shape of its nose, and the natives relate that while leaping it holds that organ with its paws, apparently to guard it against the branches. The length of its head and body is two feet.



Ruffed Lemur.

THE Lemur derive their name from their nocturnal habits, and their movements; the word Lemur signifying a ghost. The Ruffed Lemur is a native of Madagascar. It lives in the depths of the forests, and only moves by night, the entire day being spent in sleep. Its food consists of fruits, insects, and small birds, which it takes while they are sleeping. This is the largest of the Lemurs, being rather larger than a cat.

Like the former, the Flocky Lemur is a native of Madagascar. Its color is pale ferruginous above, white beneath; the fur is extremely soft; face black; eyes large and greenish-grey. Besides the above mentioned species, there is another kind of Lemur known as the white fronted.



Lemur.



Flocky Lemur.



Skull of a Lemur.

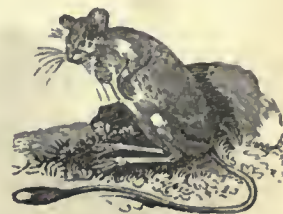


An Aye-Aye.

THE Aye-Aye, of which we have already given a brief description, is classed by some naturalists along with the Squirrel; by others, with the Monkeys; and by not a few, among the Lemurs. Timid and harmless, it passes the day in sleep, and when roused up its motions are slow. It is very impatient of cold. It appears to be a subterranean animal, coming out of its burrow on the approach of darkness in quest of its food. This consists of worms, which it draws from their holes by means of its long slender fingers.

Parry's Spermophile is an animal which naturalists have classed as being intermediate between the Ground Squirrels, and the Marmots. It inhabits the barren grounds of our northern regions from Hudson's Bay to Behring's Straits. It is found generally in stony districts, but seems to delight in sandy hillocks among rocks, where burrows inhabited by different individuals may be often observed crowded together.

The Brazilian Porcupine much resembles that of Canada in its habits. It is a sluggish animal.



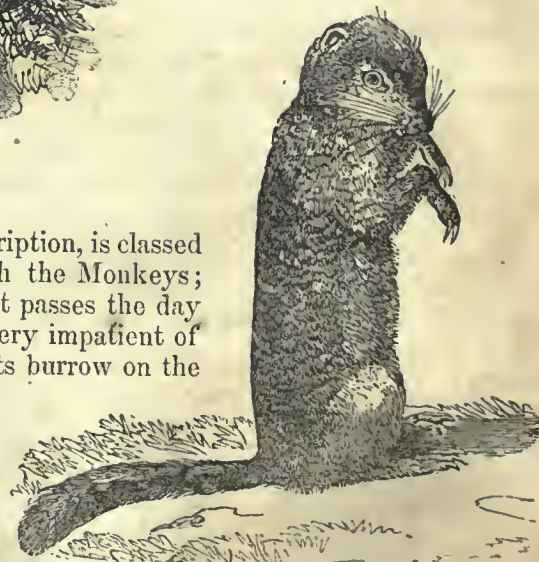
Jerboa.



Brazilian Porcupine.



Beaver.



Parry's Spermophile.



The Amboyna Bat.



Splendid Horse-shoe Bat.



Common Bat.

THE Bat tribe embraces a large number of genera, species, and varieties. Their name is derived from the singular manner in which their fore-paws, or hands are developed into wings. The smaller or common species is found in almost every country. All are nocturnal animals, flying about for food during the night, and concealing themselves during the day in old buildings, barns, hollow trees, caverns, and the like, where they cling together seemingly in one mass. In cold climates, at the approach of winter, they cluster together in this way, and fall into a sleep which lasts till spring.

The Vampire Bat is very common in South America, where it is held in considerable dread, on account of its blood-sucking propensities. Having selected an animal upon which to feed, the Vampire waits till it is asleep; then carefully fanning the victim with its wings, it softly bites a hole, not so large as a pin's head in the ear or shoulder, through which it contrives to suck enough blood to make a very ample meal.

The Long-eared Bat is a native of most parts of Europe. It is very easily tamed, and will take insects from the hand.



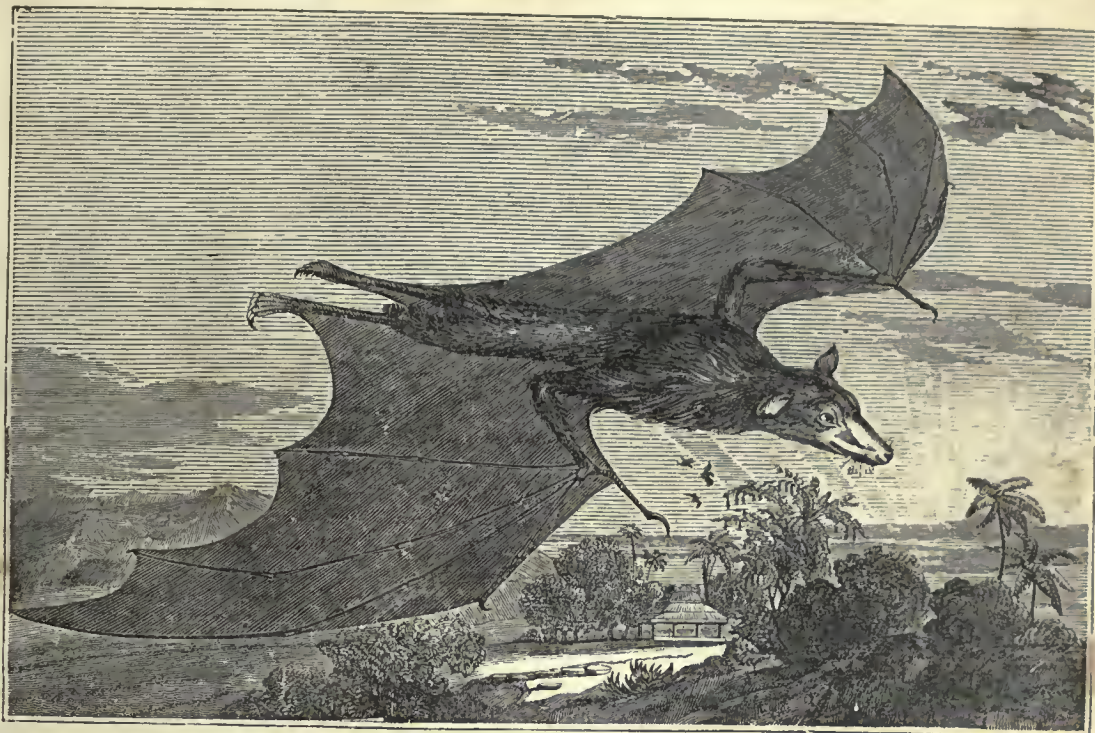
Vampire Bat.



Vampire on the Win



Long-eared Bat.



Kalong.

The Splendid Horse-shoe Bat is a native of Java. The Amboyna Bat, or Flying-fox, is found in India and Amboyna. It is of large size, and greatly resembles the Kalong, which is the largest species of the genus that has been hitherto discovered. In the full grown Kalong the breadth of the expanded wings is full five feet, and the length of the body one foot. The head is oblong, and the muzzle comparatively of moderate length; it is very gradually attenuated, and measures less than one third of the entire length of the head. The nose is short. The general color of the body and head is black, and of the neck and adjoining parts above smoky-brown. In young subjects the hairs are long, soft to the touch, and glossy; in old subjects they become crisp and rough. Numerous individuals select a large tree for their resort, and suspending themselves with the claws of their posterior extremities to the naked branches, often in companies of several hundreds, afford to a stranger a very singular spectacle. These societies preserve a perfect silence during the day; but if they are disturbed, they emit sharp piercing shrieks, and their awkward attempts to extricate themselves, when oppressed by the sun's light, exhibit a ludicrous scene.

The Greater Javelin Bat is a native of South America. No details have as yet been given with regard to its habits. There is an appendage to its nose not unlike the head of a spear, or javelin, whence it derives its name.



Kalong.



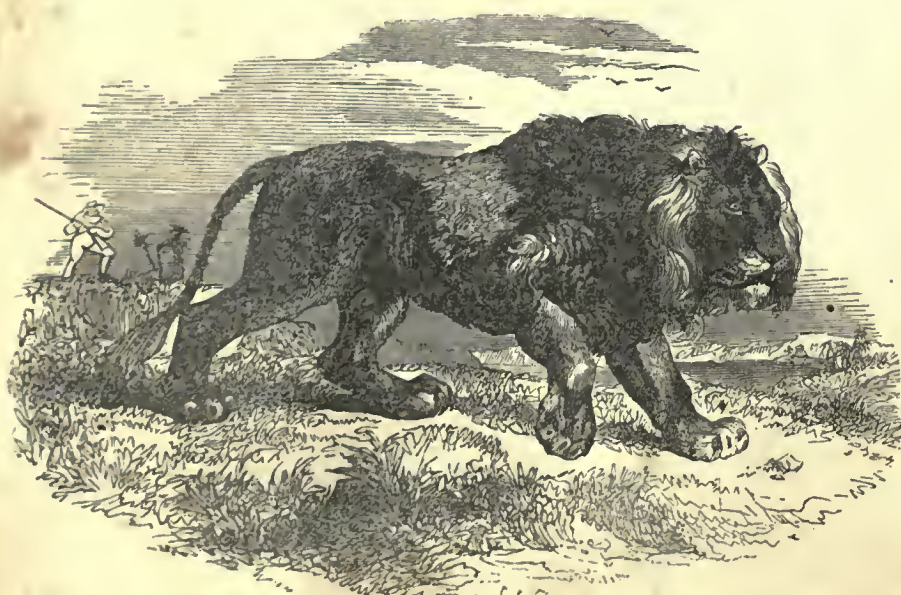
Greater Javelin Bat.



Mr. Cumming encountering four Lions, of whom he killed two.

THE Lion stands at the head of the wild beasts. His noble and dignified bearing, the terrific power compressed into his comparatively small frame, and the deep majesty of his voice, have gained for him the name of "King of Beasts." The Lion inhabits Africa and certain parts of Asia, such as portions of Arabia and Persia, and some parts of India. It varies in appearance according to the locality, but there is little doubt that there is but one species.

We are indebted to Mr. Cumming for many interesting notices of this noble animal, observed during his residence in Southern Africa, and from his book many extracts will be given in the course of this work, as by his cool and daring courage he has been enabled to watch the habits and actions of the most ferocious beasts in the depths of their own haunts.



African Lion.

The Lion is barely four feet high, and eight in length, yet he can, with little difficulty, dash the giraffe to the earth, or overcome the powerful buffalo. He has been known to carry off a heifer in his mouth, and although incumbered with such a burden, to leap a broad dyke, apparently with the greatest ease.

No animal willingly molests the Lion, and there are but very few which he cannot overcome. The rhinoceros and elephant are almost the only quadrupeds he dares not meddle with, but he does not seem to stand in much fear of them. Gnoos, zebras, and antelopes, seem to be his favorite prey,



Mr. Cumming's servant, Hendrich, killed by a Man-eating Lion.

although one of the antelopes, the oryx, or gemsbok, not unfrequently avenges its own death by the destruction of its pursuer, its long straight horns impaling the Lion from side to side. The two skeletons have been seen lying together. The roar of the Lion is one of its chief peculiarities; the best description of it is in Cumming's Adventures.

"One of the most striking things connected with the Lion is his voice, which is extremely grand and peculiarly striking. It consists at times, of a low, deep moaning, repeated five or six times, ending in faintly audible sighs; at other times he startles the forest with loud, deep toned, solemn roars, repeated five or six times in quick succession, each increasing in loudness to the third or fourth, when his voice dies away in five or six low, muffled sounds, very much resembling distant thunder. At times, and not unfrequently, a troop may be heard roaring in concert, one assuming the lead, and two, three or four more regularly taking up their parts like persons singing a catch."

"As a general rule Lions roar during the night, their sighing moans commencing as the shades of evening envelope the forest, and continuing at intervals throughout the night. In distant and secluded regions, however, I have constantly heard them roaring loudly as late as nine and ten o'clock on a bright sunny



Asiatic Lion.



Persian Lion.



Mr. Cumming hunting the Lion in Africa.

morning. In hazy and rainy weather they are to be heard at every hour in the day, but their roar is subdued."

The opinion that Lions will not touch a dead animal is erroneous; as they were frequently shot by Mr. Cumming while devouring gnoos, &c., that had fallen by his rifle. Those Lions who have once tasted human flesh are generally the most to be dreaded, as they will even venture to spring in among a company of men, and seize their victim. These Lions are called Man-eaters. During the latter part of Cumming's residence in South Africa a dreadful instance of their ferocity occurred. While the hunting party was encamped for the night in the territory of the Balakahari, a Lion taking advantage of the stormy night, suddenly sprang upon two men, Hendrick the driver, and Ruyter, the Bosjesman tracker, who were wrapped in the same blanket, by the fire. It seized Hendrick by the neck, and dragged him into the bushes, in spite of the blows which another man gave it with a burning brand, leaving Ruyter



Mr. Cumming watching for Lions at night, in a hole dug near a watering place.



A Lion shot by Mr. Cumming while carrying off a dead Gnqo.

unhurt except by a few scratches with its claws. Next morning it was shot by Mr. Cumming, who placed its skin in his magnificent collection, where Ruyter points it out with great glee.

The Lioness is much smaller than the Lion, and is destitute of the magnificent mane which is so great an ornament to her mate. As a general rule she is more fierce and active than the male, especially before she has had cubs, or while she is suckling them. She has usually from two to four cubs at a time. They are beautiful playful little things, and are slightly striped. They have no mane until about two years old. While her cubs are small the Lioness knows no fear, and will attack a company of men or a herd of oxen if they come too near her den. Her mate also ably seconds her endeavors, and has been known to keep the hunters at bay until she has withdrawn her cubs to a place of safety, after which he bounds off in the direction which she has taken.

The Lion when young is easily tamed, and shows a strong attachment to its keeper. Those who have seen Van Amburgh will know what influence man may obtain over this powerful creature. Many anecdotes have been told of the celebrated Lion "Nero," who would suffer even strangers to caress him, and carry children on his back with the greatest good nature.

Many naturalists, of whom Buffon is the chief, have fallen into errors concerning the contradictory dispositions of the Lion and Tiger. "The Lion unites with a high degree of fierceness, courage, and strength, the more admirable qualities of nobleness, clemency, and magnanimity. Walking with a gentle step, he does not deign to attack man unless provoked to the combat. He neither quickens his step nor flies, and never pursues the inferior animals except when urged by hunger," while the Tiger "presents a compound of meanness and ferocity; he seems always thirsty for blood," &c. Now nothing can be more erroneous than these sentences. The Tiger is as tameable as the Lion, the Tiger and Lion seize their prey with equal ferocity, and neither will attack a man or any other animal when satisfied with food.

There is a small hook or claw at the extremity of the Lion's tail, which has been represented as the means by which the animal lashes itself into fury, using it as a spur. This is impossible, as the claw or prickle is very small, not fixed to the bone as the claws of the feet are, but merely attached to the skin, and falls off if roughly handled. It is not present in all Lions, as Mr. Wood only discovered it once out of numerous specimens which he examined.

THE TIGER.



Tiger in a jungle.



Bengal Tiger.

This magnificent animal is found only in Asia, Hindostan being the part most infested by it. In size it is almost equal to the Lion, its height being from three to four feet, and its length rather more than eight feet. It has no mane, but to compensate for this deficiency it is decorated with black stripes, upon a ground of reddish yellow fur, which becomes almost white on the under parts of the body. The chase of the Tiger is among the most exciting and favorite sports in India. A number of hunters assemble, mounted on elephants trained to the sport, and carry with them a supply of loaded rifles in their howdahs, or carriages mounted on the elephants' backs. Thus armed, they proceed to the spot where a tiger has been seen. The animal is usually found hidden in the long grass or jungle, which is frequently eight or more feet in height, and when roused, it endeavors to creep away under the grass. The movement of the leaves betrays him, and he is checked by a rifle ball aimed at him through the jungle. Finding that he cannot escape without being seen, he turns round, and springs at the nearest elephant, endeavoring to clamber up it, and attack the party in the howdah. This is the most dangerous part of the proceedings, as many elephants will turn round and run away, regardless of the efforts of their drivers to make them face the Tiger. Should, however, the elephant stand firm, a well-directed ball checks the Tiger in his spring, and he then endeavors again to escape, but a volley of rifle balls from the backs of the other

elephants, who by this time have come up, lays the savage animal prostrate, and in a very short time his skin decorates the successful marksman's howdah. These hunts are not carried on without considerable danger, as in some cases the Tiger has succeeded in reaching the howdah, and more than one hunter has been known to overbalance himself in his anxiety to get a shot at his game, and has fallen into the very claws of the enraged brute. Once a wounded Tiger sprang at a badly trained elephant, who immediately turned round and made off. The Tiger succeeded in reaching the elephant's tail, which it mangled dreadfully,



Sir Robert Gillespie leaping over a Tiger and spearing him at the same time.



Grand Tiger Hunt of a Native Indian Prince.

but could climb no higher, partly on account of its wounds, and partly through the exertions of a native, who kept it back with a spear. The Tiger hung in this way for the greater part of a mile, when another hunter succeeded in overtaking the terrified elephant, and with a single ball freed the poor animal from its tormentor.

Tigers are usually taken by the natives in pitfalls, at the bottom of which is planted a bamboo stake, the top of which is sharpened into a point. The animal falls on the point and is impaled.

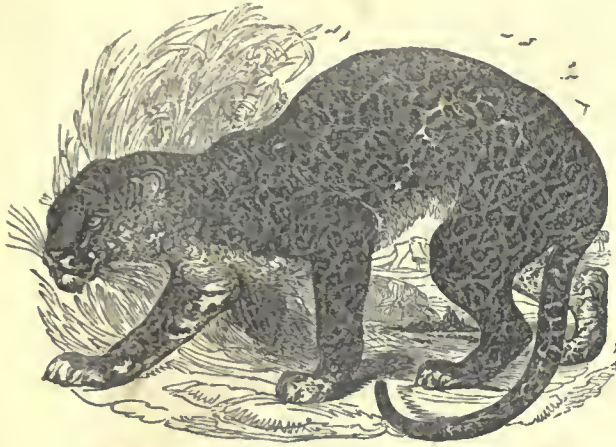
The general notion that Tigers cannot be tamed is erroneous. They can be tamed as easily as the Lion; but great caution must be used with all wild animals, as in a moment of irritation their savage nature breaks out, and the consequences have more than once proved fatal. The melancholy death of the "Lion Queen," in Wombwell's Menagerie, is a recent example of this propensity.



Tiger Shooting.



Tiger of Ceylon.



African Leopard.



Asiatic Leopard.

THE Leopard is an inhabitant of Africa, India, and the Indian Islands. A black variety inhabits Java, and is not uncommon there. Its height is about two feet. This and the following Felidæ are accustomed to live much on trees, and are on that account called Tree-tigers by the natives. Nothing can be more beautiful than the elegant and active manner in which the Leopards sport among the branches of the trees: at one time they will bound from branch to branch with such rapidity that the eye can scarcely follow them; then, as if tired, they will suddenly stretch themselves along a branch, so as to be hardly distinguishable from the bark, but start up again on the slightest provocation, and again resume their graceful antics. It is easily tamed, and expresses great fondness for its keeper, and will play with him like a cat. A remarkably beautiful one in Wombwell's Menagerie was exceedingly fond of playing with the tuft at the extremity of a lion's tail, and from the familiar manner in which he patted and bit it, he evidently considered it as manufactured for his own particular entertainment. The Leopard and Panther are considered as the same animal, on the authority of Mr. Gray.



A Jaguar.



An Ounce.

THE Ounce is a native of India, and has been often confounded with the Leopard. Its fur is much more rough than that of the Leopard, and the tail is almost bushy, especially towards the extremity. Its body is marked with irregular wavy stripes, and the head is adorned with black spots. The general color is a yellowish grey. The habits and history of this animal are but little known.

THE Jaguar inhabits America. It is larger and more powerful than the Leopard, which it resembles in color, but has a black streak across the chest, and a black spot in the centre of the rosettes. It is fond of climbing trees, and finds little difficulty in ascending, even when the trunk is smooth and destitute of branches. It chases monkeys successfully, and is said to watch for turtles on the beach.



Ocelot with a Bird.

THE Ocelot, one of the Tiger-cats, is a native of Mexico and Peru. Its height is about eighteen inches, and its length about three feet. It is a most beautiful animal, and is easily tamed. When in a wild state it lives principally on monkeys which it takes by stratagem.

THE Puma inhabits the whole of America. Its color is an uniform grey, fading into white on the under parts of its body. It lives much on trees. The Americans speak of this animal as the Panther. Many authors term it the "Cougar,"



A Puma.



An Ocelot.

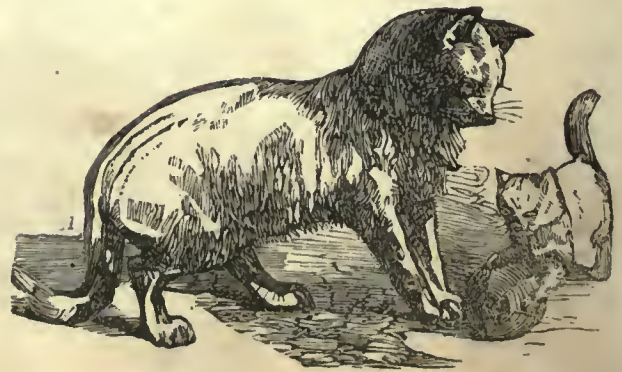


A Wild Cat.

THE Wild Cat is a species distinct from the Domestic Cat. It is found in Canada, Siberia, and Great Britain. The Domestic Cat was formerly supposed to be the same animal as the Wild Cat, but it is now proved to be a distinct species, and the difference is seen at once by the form of the tail. That of the Domestic Cat is long and taper, while that of the Wild Cat is bushy and short. The Cat displays a great affection for her kittens, and her pride when they first run about is quite amusing.



A Domestic Cat.



A Cat and Kitten.



A Lion.



A Puma.



A Domestic Cat.



A Jaguar crushed by a Boa Constrictor.



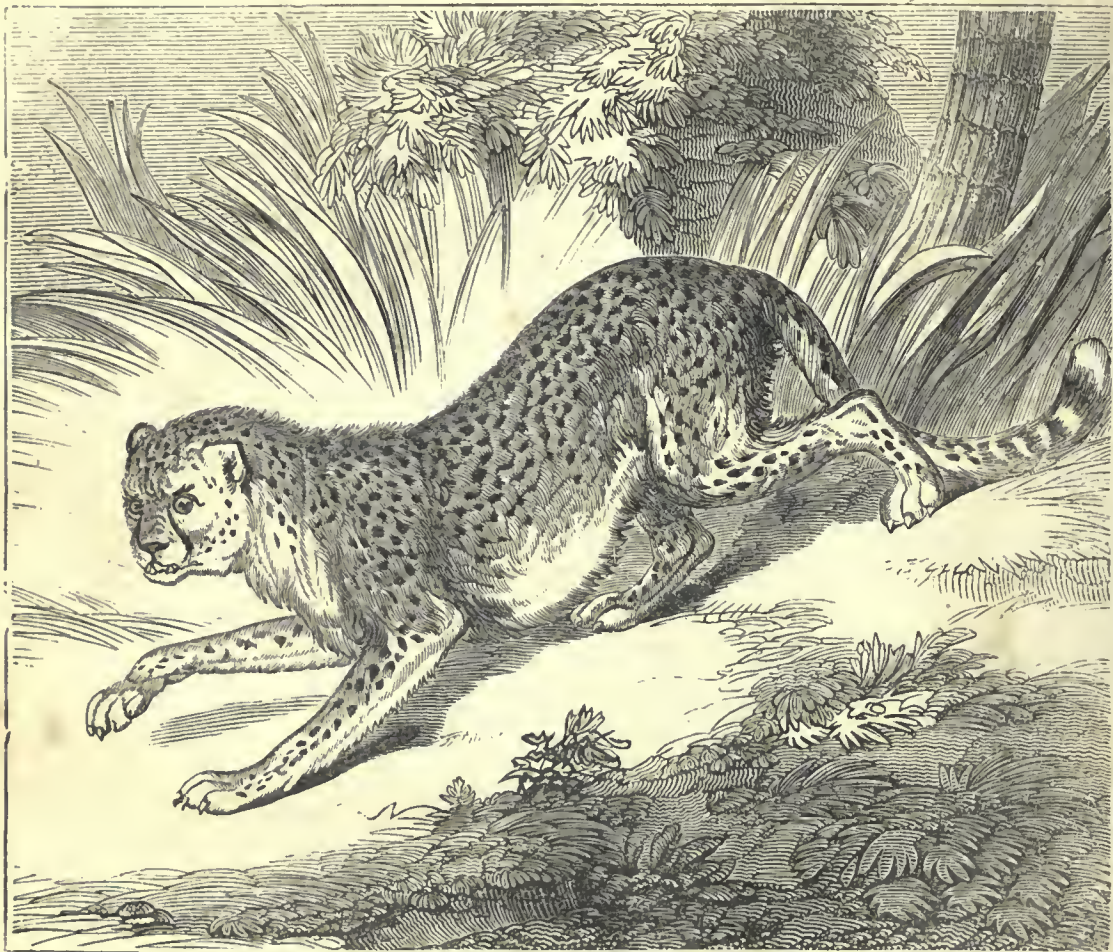
Hunting the Jaguar.



An Ocelot.
5 *



A Hunter surprised by a Puma.



The Chetah or Hunting Leopard.

THE Chetah or Hunting Leopard is found in Africa and India, and with a form like a cat, has feet like a dog. It is trained and used in hunting. It cannot climb trees. The Caracal is found in Asia and Africa, is two feet long and fourteen inches high. It belongs to the Lynx tribe.



The Caracal,



A Canada Lynx.

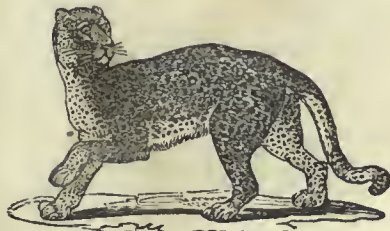
The Canada Lynx is remarkable for bounding instead of running. Its fur is greatly valued.



A Persian Lynx.



A Mexican Lion or Puma.



A Leopard.



A Jaguar watching a hord of Deer.



A Tiger.



A Domestic Cat.



A Lion.



Group of Animals of the Cat kind.



A Lynx attacking a Moose

THE LYNX.



Lynxes.

THE Lynx was formerly spread over the Old World. It was common in France, and has only disappeared from Germany at a comparatively recent period. It is still found in the north of Europe, and even in Portugal and Spain. Cuvier describes one that was killed within a few leagues of Lisbon, and M. Rory de St. Vincent mentions that he frequently met with them in the central and southern mountains of Spain. They there attain to a larger size than usual, and their colors are remarkably vivid. It is very common in the forests of northern Asia, and in the Caucasus. That which inhabits the more southern parts of Asia, and is found in Africa, is a rather distinct variety, called Caracal, a contraction of the Turkish name *kara*, black, and *kulack*, ear. It is chiefly distinguished by its uniform vinous red color, by its ears, which are black both without and within, and by a longer tail than any other lynx possess. America is known to have two, or perhaps three varieties of the Lynx. The first is that which, after Buffon, is called the Canada Lynx. Its color is grey, its tail is longer than that of the common Lynx, and the ears are shorter. The other variety which is found in the United States, is smaller than the one just mentioned. It has the form and distribution of spots of the European variety; but the ground color is grey; its spots are more numerous, deeper on the back, and paler on the sides and limbs. In their manners and habits of life the varieties differ little from one another.



An Ounce.



A Cougar.



A Tiger.



A Newfoundland Dog saving a person from drowning.

WE now arrive at the Dog family, which includes the Dogs, Wolves, Jackals, and Foxes. The first of the Dogs is the Kolsun, or Dhale, which inhabits Bombay and Nepaul. It hunts in packs, as most of the dogs do even in a wild state, and has been known to destroy tigers and chetahs. Let us pass to a more interesting animal, the Newfoundland Dog. This magnificent creature was originally brought from Newfoundland. The Newfoundland Dog is well known as a most faithful guardian of its master's property. It is remarkably fond of the water. Many instances are known of this noble animal saving the lives of people that have fallen into the water, and must have perished but for its timely aid. The Newfoundland is one of the largest of the dogs, as it stands nearly two feet two inches in height.



A Mastiff.



A Dalmatian Coach Dog.

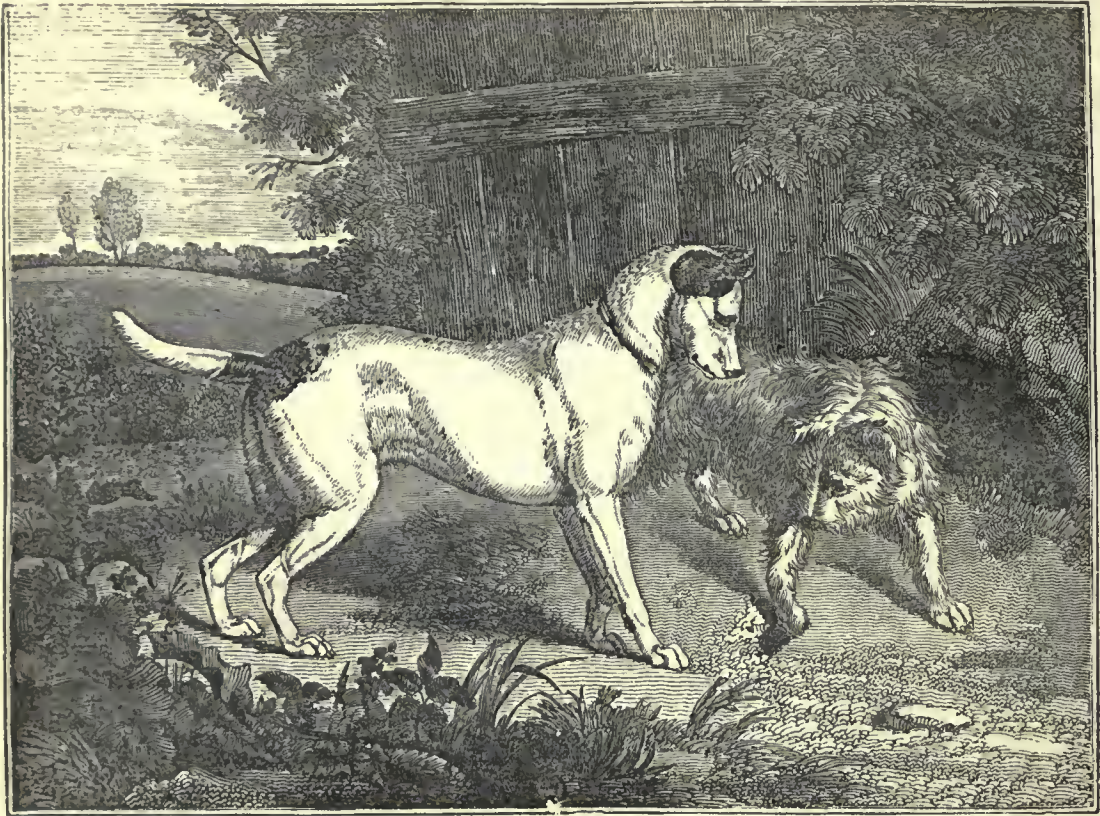


A Harrier.



A Newfoundland Dog.

THE DOG.



English and Scotch Terriers.

THE Terriers never grow to any considerable size. There are several breeds of Terriers, among which the English and Scotch are most conspicuous. These dogs are principally used for destroying rats or other vermin, and are so courageous that they do not hesitate to unearth the fox or the badger. The Scotch Terrier is a rough, wiry little dog, with hair hanging over its eyes, so that those organs are hardly visible, and when it is in the water its wetted hair quite obscures its vision. Terriers are extremely attached to their masters, and are capable of learning many amusing tricks.

The Shepherd's Dog is a rough, shaggy animal, with sharp pointed ears and nose. It is an invaluable assistant to the shepherd, as it knows all its master's sheep, never suffers them to stray, and when two flocks have mixed, it will separate its own charge with the greatest certainty. It understands every look and gesture of its beloved master, and drives the flock to any place which he points out.



A Shepherd's Dog.



A Terrier.



A Wild Dog.

THE DOG.



Italian Wolf Dogs.

ITALIAN Wolf Dogs are a courageous race, used by the shepherds of the Abruzzi to defend their flocks. They are of a beautiful form, something lighter than the Newfoundland Dog, but strong and muscular. Their fine, long hair is white.

There are several varieties of the Blood Hound, inhabiting Cuba, Africa, and England. They all have a wonderfully acute sense of smell, and can trace a man or animal with almost unerring certainty.



An African Blood Hound.



An English Blood-Hound.

THE DOG.



A Chasseur with Cuban Blood Hounds.



A Cuban Blood Hound.

The Cuban Blood Hound was formerly employed by the Spaniards to hunt down the natives while endeavoring to escape from their invasions. A few years since, one of these dogs saved the life of its master, an American hunter, by boldly attacking a Puma which had sprung on him in the darkness, and was lacerating him in a dreadful manner. The sagacious animal had been tied up at home, but apparently knowing the dangers of the forests through which his master was about to pass, he broke his chain, and arrived barely in time to save the hunter from a horrible death.

The Water Spaniel as its name denotes, delights in plunging into the water, especially if any game is to be found among the rushes that fringe the rivers. It is a most useful assistant when shooting wild ducks, or water hens, as, when wounded, they conceal themselves so effectually, that, without a dog, discovery is almost impossible. It can dive to some depth, and bring up in its mouth any small object from the bottom.

The Pointer is used by sportsmen to point out the spot where the game lies. It ranges the fields until it scents the hare or partridge lying close on the ground. It then remains still as if carved in stone, every limb fixed, and the tail pointing straight behind it. In this attitude it remains until the gun is discharged, reloaded, and the sportsman has reached the place where the bird sprung. It then eagerly searches for the game, and brings the bird in its mouth.



A Water Spaniel.



A Spanish Pointer.



An English Pointer.

THE DOG.



A Dingo.



An Italian Greyhound.



An Esquimaux Dog.



A Mexican Wild Dog.



An Irish Greyhound.



Alpine Spaniel saving the life of a Child.

The Spanish Pointer has long been naturalized in England. His head and snout are thick, his fur short, smooth and glossy. He is easily trained.

The Irish Greyhound, or Wolf Dog, is large and powerful, but harmless and indolent. His fur is smooth and short. He was formerly employed in hunting wolves.

The Italian Greyhound is a small and very elegant animal.

The Alpine Spaniel, or St. Bernard's, is celebrated for his sagacity in discovering travellers buried in the snow. The story of one of them saving the life of a child found perishing in the snows is only one of hundreds of the same kind, well authenticated by the benevolent monks of the monastery of the Great St. Bernard.

Among the wild dogs is one variety found in America, another in Africa, and a third, called the Dingo, in Australia. The Esquimaux Dog, used in drawing sledges, is more than half wild.

The Beagle is the smallest kind of dog used in the chase, chiefly in hare hunting.

The Bull Dog is lower than the mastiff, but more muscular; his head is round, his ears half pricked, his snout blunt, his neck thick and short, and his under jaw projecting.



Cuban Blood Hound, female and young.



A Beagle.



A Bull Dog.

THE WOLF.

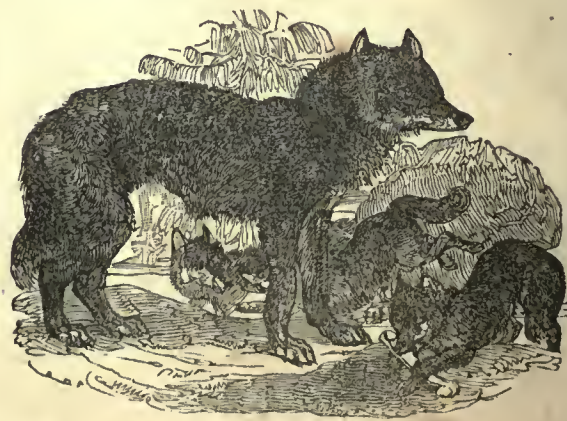


A Wolf Hunt, from a painting by Snyders.

THE Wolf is common both to the Old and New World, particularly in the immense forests and cold regions of the north. In length he is about three and a half feet, and in height about two and a half. Both externally and internally he resembles the dog, only gaunt and emaciated, with a fiercer and more savage aspect. His common color is a mixture of black, brown, and grey; but some incline to yellow, some are found quite black, and others altogether white; his hair is rough and hard, mixed towards the roots with a kind of ash-colored fur; his eyes open slantingly upward, and the color of the eyeballs is of a fiery green; his tail is nearly straight. He is strong and agile, but cruel, cunning, and cowardly. When pressed with hunger, however, he becomes daring and ferocious, and will not hesitate to attack man.



European Wolves.



American Wolves.

THE WOLF.

The Wolf is in general a solitary animal, and partly nocturnal in his habits, but frequently associates for the sake of plunder. In Poland, during a winter day, a whole pack of wolves will attack a carriage while passing along. The horses are commonly the first victims; though an anecdote, which commemorates the generous resolution of a servant, proves that they occasionally give this uncoveted preference to men. A gentleman was travelling with his servant in a sledge through one of these dreary forests, when they were suddenly attacked by a number of wolves, who leaped furiously at the carriage. The servant, who instantly saw that one of them at least must perish, exclaimed, "Protect my wife and children," and instantly leaped into the midst of them. His master drove wildly on and escaped. The she-wolf goes with young a hundred days, and brings forth five or six, or sometimes more, at a litter. The cubs come into the world with their eyes closed.

The Clouded Black Wolf, from the extreme northern regions of America, is much larger and more robust than the common species, and it is very ferocious.



Wolves attacking a Sleighing Party.



An Arctic Wolf.



An Asiatic Wolf.



Wolves attacking a Wild Horse.

THE WOLF.



Wolves attacking a Moose.



A Wolf Hunt.



East Indian Wolf Trap.

In the accompanying engraving, a representation is shown of the manner in which wolves are caught in India. This is very simple, but scarcely ever meets with failure. Finding a place where the animals are wont to prowl, the natives dig a deep pit, and cover it with twigs and herbage, so as to look as natural as possible. On both sides of this pit, a strong bamboo cane is fixed in the ground. The ends of the canes are then made to meet in the centre, just above the hidden pit underneath. Where these unite a kind of basket is hung, smeared with blood, and holding the body of a young goat or sheep. Having a keen scent, the wolves speedily find this bait, and in trying to get at it are almost sure to fall into the pit, where they are easily speared to death.

A traveller being pursued by wolves urged his horse at the very top of his speed. He reached a house about two miles distant. At the entrance was a gate, which happened to be closed, but the horse dashed this open, and thus himself and his master found refuge within the yard. They were followed, however, by nine of the wolves; but fortunately, at the instant these had entered the inclosure, the gate swung back on its hinges, and thus they were caught, as it were in a trap. They lost their ferocity at once, and became completely cowed; so far from offering to molest any one, they slunk into holes and corners, and allowed themselves to be slaughtered, almost without resistance.



Wolf attacking a Child.



Wolves pursuing a Traveller.

THE JACKAL. THE FOX.



A Cur Fox.



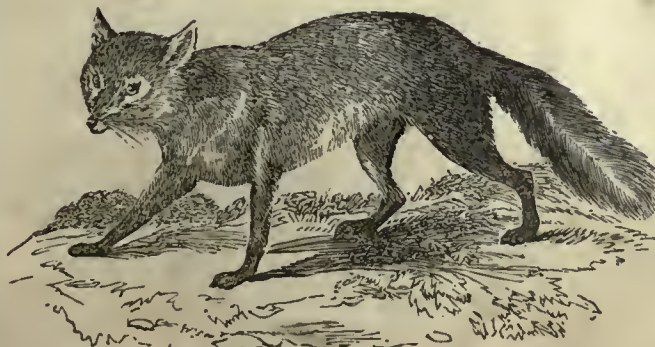
A Jackal.



A Mastiff Fox.

THE Jackal is found in North Africa, Persia, and India. It, like the wolf, unites in bands to hunt, and the prey which the pack has taken so much pains to secure is not unfrequently confiscated by the lion, who keeps the reluctant hunters at a distance until he has satisfied his own royal appetite. The Jackals, however, often retaliate by assisting at the demolition of the larger prey which the lion destroys. It is very useful in the East, as it acts as scavenger, and consumes the offal which, in those not very cleanly towns, is cast into the streets, and would inevitably cause a pestilence, were it not for the assistance of the Jackals and other creatures. It is excessively fond of grapes, and makes dreadful havoc in the vineyards. While hunting, it utters most piercing shrieks, which have been compared by those who have heard them to the wailings of evil spirits. There are several kinds of Jackals, one inhabiting Senegal, and another the Cape of Good Hope. They are rather larger than the fox, but do not possess nearly so bushy a tail as that "brush," wherein sportsmen take so much delight.

The Fox, the terror of the hen-roosts and the delight of sportsmen, is found in most parts of America, and many other countries. It varies very much in color and size, according to the country in which it lives. The habits of this animal are mostly nocturnal. It lies by day concealed in its burrow, if it be fortunate enough to possess one, or in the depths of some thicket, if not a householder. Towards evening it sallies out in search of food, and woe to the unfortunate hare, rabbit, pheasant, or fowl that comes in its way. Sometimes he steals into the hen-roost, destroys and carries off most of its inmates, some of which he devours on the spot, others he carries home, and the remainder he buries for a future repast. When irritated, the fox gives out a strong, disagreeable scent, which lies so long on the ground that it may be perceived for nearly an hour after the fox has passed.



A Red Fox.



A Greyhound Fox.



A Striped Hyæna.

THERE are several varieties of the Hyæna, as the striped, spotted and villose; all similar and all disgusting in their habits. They are found in Asia and Africa. They feed on carrion and on small quadrupeds. They not unfrequently dig up recently interred corpses. Their jaws and teeth are exceedingly powerful, as they can crush the thigh-bone of an ox with apparently little effort. Their skull, too, is very strong, and furnished with heavy ridges for the support of the muscles which move the jaw. The hinder parts of the Hyæna are very small, and give it a strange, shambling appearance when walking. The Hyæna is easily tamed, and even domesticated, so that the tales of its untameable disposition are entirely erroneous.



Villose Hyæna.



Spotted Hyæna.



Ichneumons.

Few animals are more useful than the Ichneumon. Snakes, lizards, crocodiles' eggs, or even young crocodiles themselves, form their principal food. The Egyptian Ichneumon, or Pharaoh's Rat, as it is sometimes called, is a native of North Africa, and is often domesticated for the purpose of destroying the various snakes, and other reptile annoyances, which are such a pest in the houses of hot countries.

The Civets are active little animals, averaging about two feet in length. The whole group is celebrated for the perfume which is secreted in a glandular pouch near the tail, and is of some importance in commerce. The Civet is only found in North Africa, especially in Abyssinia, where it takes up its abode on uncultivated and barren hills. It feeds upon birds and the smaller quadrupeds, which it takes by surprise. As it pursues its prey by night only, its eyes are formed for seeing in the dark.

The Genet slightly resembles the cat, particularly in its spots, and the power of climbing trees. It inhabits Africa, and is not unfrequently found in the South of France.

The Zibet, found in the East Indies, is of the same genus as the Civet, and produces a similar perfume.



A Genet.



The Zibet.



A Civet.

THE MUSTELINA, OR WEASEL.



Hunting the Sable, in Siberia.

THE Mustelina, or Weasels, are easily distinguished by their long slender bodies, short muzzle, sharp teeth, and predatory habits. They inhabit almost every part of the world, and procure their food by creeping on the unsuspecting victim, generally a rabbit, rat, or bird, and then suddenly darting at it and piercing its neck with their sharp teeth.

The Pine Marten, a native of the North, and an inhabitant of the pine forests, whence it derives its name, is abundant in Siberia and the northern portions of America. It is much sought after on account of its beautiful fur.

The Sable, long famous, for its costly fur, inhabits Siberia. The chase, or rather the search, after these animals is attended with dreadful hardships and great danger.



Sable.



Rat.



Pine Marten.

THE MUSTELINA, OR WEASELS.



Weasel.



Pine Marten.



Polecat.



Stoat, or Ermine, in its summer dress.



Common Weasel.

The Polecat is very common in most parts of Europe. It is dreadfully destructive to the poultry, and destroys both old and young. Winter is the usual time for its appearance in the farm-yard, as in the summer it obtains its food with less risk among the rabbit warrens.

The Stoat, or Ermine, is found in the northern parts of the Old World and the New. It is less than the Polecat, but its habits are scarcely less predacious. Hares and rabbits fall easy victims to their little enemy, who dispatches them with a single bite, penetrating the brain. During the winter, the Stoat becomes partially white, in extreme northern countries wholly so, except the tip of the tail, which remains black. In this state it is called the Ermine, and is killed in great numbers for the sake of its beautiful and valuable fur.

The Common Weasel is the least of this tribe, and is found in most parts of Europe and America. It wages unrelenting war on rats and mice, and in an incredibly short space of time extirpates them from a barn or stack. It hunts by scent, like dogs, and tracks the unfortunate rat with the most deadly certainty. On this account some farmers encourage it on their premises, but they generally destroy it. It is a most courageous little animal, and will even attack men, who have found it by no means a despicable antagonist, as it invariably dashes at the throat, where a bite from its long sharp teeth would be very dangerous, and might produce death.

THE MOUSE, THE POUCHED RAT, AND THE MOLE RAT.



Pouched Rat.



Common Mice.

THE Mouse is so well known, that a description of its size is useless. The Mouse is said to be greatly susceptible of music. An anecdote is related of a gentleman, who was playing a violin, seeing a Mouse run along on the floor and jump about as if distracted. He continued the strain, and after some time the Mouse, apparently exhausted with its exertions, dropped dead on the floor.

The Pouched-rat, though long since noted by various observers, is still but little known. It is rendered peculiar in its appearance by the cheek-pouches exterior to the mouth, its short fore legs and long claws.

The Mole-rat is a native of Asia Minor, Syria, Mesopotamia, and Southern Russia. The Russians term it *Slepez*, or the blind. In the Mole-rat the eye is a minute black grain lying beneath the skin, which passes over it, and is besides covered with the fur: it is evident that the sense of vision is denied to this creature; but by way of amends, its internal organs of hearing are largely developed. The Mole-rat has much of the manners of the common mole: it is gregarious, and its burrows are clustered together. Its burrows consist of galleries at a little distance below the surface of the earth, which communicate with chambers sunk to a greater depth. It burrows very expeditiously. In the morning it often quits its retreat and basks with its mate in the sun. At the least noise it raises its head to listen, and in a menacing attitude; when attacked, it snorts and gnashes its teeth, and defends itself resolutely, inflicting severe wounds. There is a superstition among the people of the Ukraine, that the hand which has suffocated one of these animals is gifted with the virtue of curing serofulous affections.



Mole Rat



THE FISHER, WOMBAT, AND DUSKY PACA.



Ocelot, attacking a Crane.



Coati Mondí.



Dusky Pacas, attacked by a bird of prey.



A Marten.



A Wombat.



Fisher, attacking a Rabbit.

THE Fisher is an inhabitant of the northern parts of North America. It is a very fierce, carnivorous animal, and, in its habits, greatly resembles the Wolverine, or American Glutton, to which it is allied. The hunters and trappers of the regions it inhabits hate it most cordially, as it is continually robbing their traps, and is itself worth little or nothing when it is caught.

The Wombat is a burrowing animal, and is found in Australia. Its length is about three feet. Its motions are clumsy, and much resemble those of a Bear. Though its disposition is gentle, yet it bites and is furious when provoked, and utters a low cry, between a hissing and a whizzing sound.

The Dusky Paca is a native of South America. It lives in burrows, and roots with its nose and grunts like a pig. In length it is about two feet. Its flesh is highly esteemed, and in some districts is in ordinary consumption. For the table it is prepared by being scalded like a sucking pig, and then roasted.



Dusky Paca.



Caracal.



Chinchilla.

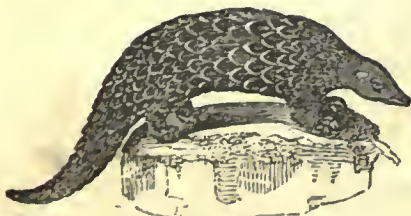
THE COIPUS.



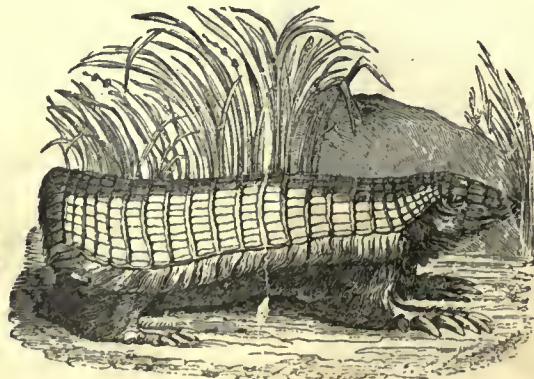
Coipus.

THE Coipus, is a most important animal in a commercial point of view. The fine under-fur which invests its body being extensively employed, like that of the beaver, in the manufacture of hats, thousands of its skins are annually imported, under the name of *Racoonda*.

The Coipus, is a native of the southern and meridional regions of the American Continent. It resides habitually in burrows or holes which it excavates along the banks of the larger rivers, and in these burrows the female brings forth her young, from five to seven in number, to which she manifests great attachment, taking them with her as soon as sufficiently grown to follow her in her rambles. Every point in the configuration of this animal indicates its aquatic habits, as well as its facility of burrowing. The body is clothed with two sorts of hair, an under garment of fine close fur, almost water-proof, and an upper layer of long shining straight hairs of rich brown, which is the general color, except on the muzzle, which is dirty white.



Long-tailed Manis.



Pichiciago.



Coipus.



Coast Rat.



Common Mole.



Desmans.



Star-Nosed Mole.

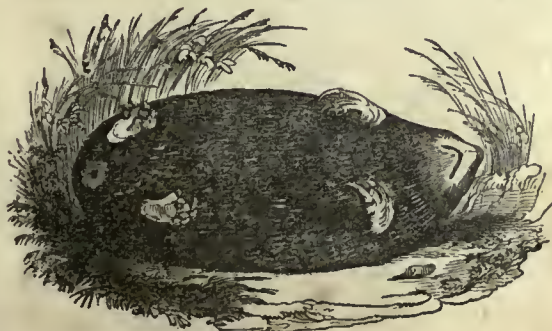
THE Common Mole, or *Talpa*, is found nowhere but in Europe. The whole structure of this animal is beautifully adapted to the subterranean life which it leads, and to the mode in which it seeks its food. The Mole has been supposed to be deficient in the sense of sight, the eyes being so small, and so hidden behind the hair, that their existence was long denied; it has been ascertained, however, to be tolerably sharp-sighted. The sense of smell is extremely acute, and its organ largely developed. At the same time it appears to be assisted by that of hearing, which is certainly acute, although aided by no external ear. The burrows of the Mole are of a beautifully complicated construction, and are formed with the utmost art. Its food chiefly consists of earth-worms and the larvæ of beetles.

The Cape Mole, inhabiting the South of Africa, is very similar to the Common Mole in structure and habits; but is remarkable as being the only known mammal which presents any appearance of those splendid metallic reflections which adorn so many birds, fishes and insects. Its fur is green, changing with the light to a copper or bronze.

The Star-nosed Moles are confined to North America; they closely resemble the Common Mole in their feet, general aspect and habits, but the tail is longer, and the disc at the end of the snout is encircled by curious little moveable cartilaginous processes like the rays of a star.

The Desman, or Russian Musk-Rat, is abundant in the lakes and rivers of Southern Russia, feeding on worms, aquatic insects, and especially leeches, which it searches for in the mud at the bottom of the water, with its long flexible snout. It exales a strong musky odor.

The Coast Rat is a native of Southern Africa, frequenting sandy tracts along the coast. It is about a foot in length, exclusive of the tail, which is about three inches. The general color is greyish ash.



(73) Cape Mole, on its back.



Cape Mole.



Common Dormouse.



Indian Gerbille.

THE Dormouse is very common in all the warmer parts of Europe. It lives in copses and among brushwood, through which it makes its way with such rapidity that it is very difficult to capture. During the winter it lies torpid, but takes care to have a stock of food laid up, on which it feeds during the few interruptions to its slumbers.

The Agouti lives in Brazil, Guiana and Paraguay. It is about the size of a rabbit, and like that animal is generally found in company. In Brazil and Guiana, the Agouti is much sought after for the sake of its flesh, but it appears that in Paraguay the flesh is not eaten. It feeds on vegetables, especially yams and tubers, but in the West India Islands it devours the sugar canes, and is a great pest to the planters.

The Capybara is the largest of all the *Rodentia*. At first sight it looks very like a pig, and its skin is covered thinly with hairs like bristles, which add to the resemblance. It inhabits the borders of lakes and rivers in many parts of Southern America. During the day, it hides among the thick herbage of the banks, only wandering forth to feed at night, but when alarmed, it instantly makes for the water, and escapes by diving. It is hunted for the sake of its flesh, which is said to be remarkably good. The Jaguar appears to be of the same opinion, for he is the most terrible enemy of this creature, destroying immense numbers. The food of the Capybara consists of grass, vegetables and fruits. Its length is about three feet six inches.

The Indian Gerbille is of the size of a common rat. It is common in Hindostan, and seems to be gregarious, great numbers associating together. These animals are very abundant about cultivated lands, and are very destructive to wheat and barley crops, of which they lay up considerable hoards in spacious burrows. Certain classes of the Hindoos go in quest of these animals, at proper seasons, to plunder their hoards of grain; and often within the space of twenty yards find as much wheat in the ear as could be crammed into a bushel basket.



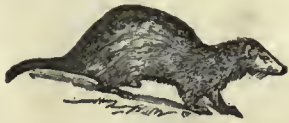
Capybara.



Agouti.



Capybara.



Ferret.



Hunting the Giraffe.



Monkey, Catching Birds.

THE Sloth inhabits the remote and gloomy forests of the New World, from Brazil to Mexico. It is about the size of the fox; the fore limbs are double the length of the hinder, wanting soles, but furnished with three toes, which terminate in strong, hook-like nails, crooked downward and backward; these render moving on the ground as difficult for him as it would be for a man to advance while supported on the tips of his nails. Its hair is thick and coarse at the extremity, and gradually tapers at the root, where it becomes fine as the finest spider's web, and is so much of the hue of the moss which grows on the branches, that it is difficult to detect it when at rest. In the deep woods where it resides, the branches of the trees touch each other in great profusion, so that it easily passes from tree to tree, and that with a rapidity which is far from justifying its cognomen of Sloth. It is a timid, harmless creature, and its flesh is esteemed a great delicacy by the Indians. Its food consists of leaves, buds, and fruit. It is a ruminating animal and has four stomachs.

The Ferret was originally imported from Africa to Spain. It has white fur and red eyes. It is easily tamed, and when muzzled, is made use of to drive the rabbits from their burrows.



Sloths.



A Sloth.

THE SLOTH.



Sloths.

THE Sloth, in its wild condition, spends its whole life on the trees, and never leaves them but through force or accident; and what is more extraordinary, it lives not *upon* the branches, but *under* them.



A Carcajou attacking a Deer

There are many marvellous stories in circulation among the wild hunters of the west respecting the ferocity, activity and strength of the Carcajou. It is admirably adapted for climbing. It preys on deer, beavers, and whatever animals it can master.



A Carcajou.



A Carcajou watching a Deer.



A Ratel.



A Carcajou.



A Carcajou watching a herd of Deer from a tree.

THE Wolverine, Glutton, or Carcajou, inhabits North America. Accounts vary respecting the habits of this animal. The older naturalists say that it ascends trees, and drops on the neck of any unfortunate deer which happens to pass beneath, and that having once secured its prey, it never leaves it until the last morsel is consumed. Be this as it may, the Carcajou is known to hunt after its prey, which it follows for many miles at a slow but persevering pace, and seldom fails of bringing it down at last. It is especially hated by the sable hunter, as it will follow him in his rounds, robbing the traps of the baits as it proceeds, and should a sable be caught it generally tears it to pieces, or buries it in the snow. The hunter has some slight revenge in robbing it of its skin, as the fur is in some request, but the mischief it does him is not by any means counterbalanced by the value of its hide. It is a very determined animal, and when attacked defends itself vigorously, proving more than a match for a dog. The length of the Carcajou, without the tail, is about two feet six inches.

The Ratel is a native of South Africa, and lives principally on the combs and honey of the wild bee, although it is very probable that much of its subsistence is derived from flesh and roots. It is said to be guided to the bee's nest by a bird called the Honey-guide, which, as the natives assert, being very fond of honey and unable to attack the hive by itself, seeks for the Ratel, and admonishes it by a peculiar cry that the desired honeycomb is not very far distant.

The Ratel's hairs are stiff and hard, its hide is tough, and the animal itself difficult to kill. The natives assert that it is almost impossible to kill this creature, without giving it a great number of violent blows on the nose; on which account they usually destroy it by shooting it, or by plunging a knife into its body. The shortness of its legs will not permit it to escape by flight, when pursued by the hounds. It is able, however, sometimes to extricate itself from their clutches, by biting and scratching them in a most terrible manner; while, on the other hand, it is perfectly well defended from the assaults of their teeth by the toughness of its hide; for, when a hound endeavors to bite one, it can lay hold only on this part, which instantly separates from the creature's body or flesh, as it is reported to lie loose from the skin, as within a sack; so that, when any one catches hold of one by the hind part of the neck, and that even pretty near the head, it can turn round, as it were, in its skin, and bite the arm that seizes it.



Badgers.

THIS harmless and much injured animal (which is often subjected to such ill treatment that the term "badgering" a person is used to express irritating him in every possible way,) is found throughout Europe and Asia. It is not now very common in England, but is frequently found in Scotland, where it is termed the "Brock," a name familiar to us all, through the means of Dandie Dinmont, who also immortalized the pepper and mustard terriers.

The Badger lives at the bottom of deep burrows which it excavates, and in which it passes all the day, sleeping on a very comfortable bed of hay and grass. When the evening approaches it seeks its food, consisting of roots, fruit, insects, and sometimes young rabbits. It is also said to attack the wild bee, and boldly to devour the honey and combs, its thick hair and skin rendering it utterly regardless of the stings of the enraged bees, who "might as well sting a barber's block."

The Badger leads the most solitary and quiet life, not being found in company even with the females of its own species. When attacked, it shows great resolution and courage, grappling with a dog of twice its own weight, and keeping a firm hold with its teeth. When taken young they may be easily tamed, and evince much docility and playfulness. No treatment, however kind, can change the character of the adult.

The cruel sport of baiting the Badger is still continued. The poor creature is placed inside a kennel, and dogs set at it, who are not unfrequently worsted by the Badger, as its bite is terrific, and its skin so tough, and hair so thick, that the bites of the dog do not take full effect. The pleasure of this "sport," as in many other diversions of the sporting world, appears to consist in trying whether the dogs or the Badger will be most mangled in a given time.

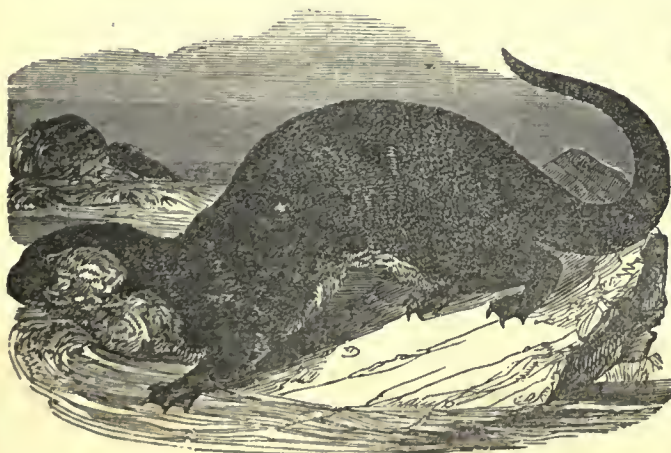
Its skin is rather valuable, the hair being extensively employed in the manufacture of brushes, and its fur being in some request for holsters. The omnivorous and thrifty Chinese eat its flesh, as indeed they will that of most animals, and consider its hams a very great dainty. The length of the Badger is about two feet three inches.



An Otter, fishing.

THE Common European Otter, is about two feet long, with a tail sixteen inches in length, flattened horizontally, with short stout limbs, five toes on each, webbed, and having strong grooved nails, but loosely articulated; they are capable of being brought on a line with the body, and used as fins.

The Sea Otter, in the northern part of the Pacific Ocean, is double the size of the European species. It is hunted for its fur, which is of a blackish velvet-looking color.



An Otter.



An Otter.



Hunting for Otters at the Cairn.

In the British Islands they have but one species of Otter. But the members of the genus are very numerous, and spread respectively over every quarter of the globe—nor are all confined to fresh waters; on the contrary, some are fishers on the sea, and take up their abode, like seals, in the crevices of rocks on the shore. Of these we may instance the *Lutra stelleri*, a native of the Polar Regions.

The Otter is found on the wild shores of the western isles of Scotland. Among the Highlanders it is a favorite sport to hunt this animal with dogs of the terrier breed. Parties will sally out with torches at night time, when the Otter leaves his hole to seek food. During the day he conceals himself under the large bare stones or fragments of rock close to the margin of the sea, forming what is called a "cairn." It is a difficult matter to force him from his retreat. The writer being in one of the Hebrides, accompanied a party of gentlemen, attended by gamekeepers, for the purpose of witnessing this sport. It was a fine morning in September. Landing on one of the islands from a boat, the terriers were loosened from the couples and left to their own instinct to find the otter's den. After scrambling a considerable distance over masses of rock and loose pebbles on a remarkably wild and beautiful shore, the dogs by their eagerness of manner and incessant barking, convinced the party that the game was within scent. The gentlemen with guns cocked, then arranged themselves in convenient situations for intercepting the passage of the Otter, should he attempt to take refuge in the sea; some mounted on the tops of rocks, others stood near the water or in the boat which had accompanied the party from the landing place. The keepers in the meantime assisted the dogs in their efforts to discover the lurking hole of the prey. One of them, a thick-set Highlander, displayed a very characteristic enthusiasm. Addressing the dogs in Gaelic, he set to work with all the fervor of the animals themselves, tearing away large stones from the mouth of the hole, and half burying himself to enable the dogs to come at their object; they in the meantime ran about, yelping in the greatest excitement, and scratching at every aperture between the stones. While this action was going on at one hole, a large Otter poked his head out of another, and looked about with as much astonishment as his countenance was capable of expressing, until catching a glimpse of one of his enemies, he suddenly retreated from the light. This incident having been observed, the attention of the party was

transferred to the retreat thus betrayed. A large stone was first uplifted and hurled upon the top of the pile, with the intention of either forcing the inmates out by the shock, or of breaking some of the stones. Then a pole was thrust into the crevice, which was enlarged so as to admit a dog. One of the canine besiegers immediately rushed in, and, after a few seconds spent in grappling with his antagonist, an Otter was dragged forth, at whom the whole body of dogs ran a-tilt. His defence was most heroic; many of his assailants exhibiting evidences of the power of his bite. The battle was continued for several minutes; and to those who delight in the display of animal ferocity, the noise of the enraged combatants, and the sight of wounds and death, must have afforded high enjoyment. Dogs and Otter, involved in one compact group, rolled down a precepitous ledge of crags, at the bottom of which, the power of numbers prevailing, the poor Otter yielding up his life, "dying very hard," as it is called. Two more Otters were taken directly after at the same cairn; one was shot as he made towards the water, the other was dragged by the tail, by one of the men, from his hole, and bagged alive. This was called a good day's sport.



Otter Hunt in Scotland.

Among the sports of our forefathers, Otter hunting was not one of the least esteemed; and a breed of rough-haired powerful dogs was employed in aiding the exertions of the hunters. As the water is the congenial element of the Otter, a single dog has there little chance against so active and resolute an antagonist, nor indeed could any number unassisted bring him to bay. When forced from his retreat, it is in the water, therefore that the animal naturally takes refuge; here a host of dogs assailing him would oblige him to swim beneath the surface as long as he could hold his breath, and on his rising to breathe he would be met by a shower of spears, launched at him by the hunters on the bank. Thus attacked on every side, still his activity and resolution would, under ordinary circumstances, enable him to baffle for a long time the most vigilant pursuit of his enemies, and not unfrequently to escape. But at length the poor animal perished, as too often happened, wounded and oppressed by numbers, yet fighting to the last. In our day Otter hunting is less commonly practised, as the animal is more scarce as well as more limited in its localities; it is not, however, by any means forgotten.

THE BEAR.



Polar Bear.



Grizzly Bear.

THE Bears and their allies are mostly heavy, and walk with the whole foot placed flat on the ground, unlike the cats, dogs, &c., who walk with merely their paws or toes. All the bears are omnivorous, that is, they can eat either animal or vegetable food, so that a leg of mutton, a pot of honey, a potato, or an apple, are each equally acceptable.

The Polar, or White Bear, called Nennook by the Esquimaux, lives in the Arctic regions, where it feeds on seals, fish, and even the walrus, but it dares not attack the latter animal openly. It is a formidable antagonist either by land or water, as it dives with great ease, and is able to chase the seal amid the waves.

The Grizzly Bear is a native of North America. It is the most ferocious and powerful of its family. The American Indians, fear it so much that a necklace of its claws, which may only be worn by the individual who destroyed the bear, is a decoration entitling the wearer to the highest honors. It is able to overcome and carry off the enormous bison, and to dig a pit in which to bury it.

The Cinnamon Bear is found in Russia. It is so called from its color.

The Brown Bear inhabits the north of Europe, Switzerland, and the Pyrenees. It has been extirpated from England for many centuries, but is recorded to have been found in Scotland so late as 1057. The inhabitants of Northern Europe hunt it with much skill, and take it in traps and pitfalls, availing themselves of its love for honey. The Bear scents the honey and in his endeavor to come at it, falls into the pitfall and is captured.



Black Bear.



Cinnamon r.



Brown Bear.



Polar Bears catching Seals.

A sailor in the Arctic regions nearly lost his life by imprudently attacking a Polar Bear with no weapon but a rusty musket, which could not be induced to fire; and indeed had he not been separated from the infuriated Bear by a cleft in the ice, he could hardly have escaped its claws. As the seals frequently crawl out of the water upon rocks or fragments of ice, the Polar Bear is forced to swim after them, but lest they should observe him he makes approaches by a succession of dives, and contrives that the last dive brings him directly under the unsuspecting seal, who is immediately grasped and killed. Richardson states that these bears are often drifted from Greenland to Iceland on the fields of ice, and that they find the flocks and herds so very delicious after a long course of seal diet, that the inhabitants are forced to rise in a body and put an end to their depredations. To give this animal, who is constantly running over fields of ice, a firm footing the soles of its feet are thickly covered with long hair.



In our day Otter bears are found in its localities; it is



A Grizzly Bear.



A F Hunt.



The Indian and the wounded Bear.

thought the poor animal could understand what he said to it. "Oh," said he, in answer, "the bear understood me very well. Did not you observe how ashamed he looked while I was upbraiding him?"

The common mode of hunting the Black Bear is by two or three well-trained dogs. When he finds that he is pursued, he generally pushes forward for eight or ten miles, and sometimes more, in nearly a straight course. But when the dogs come up to him, he turns and strikes at them with his paws, the blows of which are so severe, that one of them, taking effect, would instantly fell the strongest dog to the ground. The great art in training the dogs consists in teaching them to avoid these blows, and keep harassing the animal till he is exhausted.



Chippeway Indians hunting the Bear with dogs.

In this fight, after receiving a shot in the flank, the Bear ran off, but after biting and tearing at the wound, turned upon the hunter and came at him reared on her hind legs. Fortunately she had given him time to reload, and he dispatched her with a ball through the heart.

The Black Bear is often successfully hunted with dogs; but Bruin often handles them rather roughly.

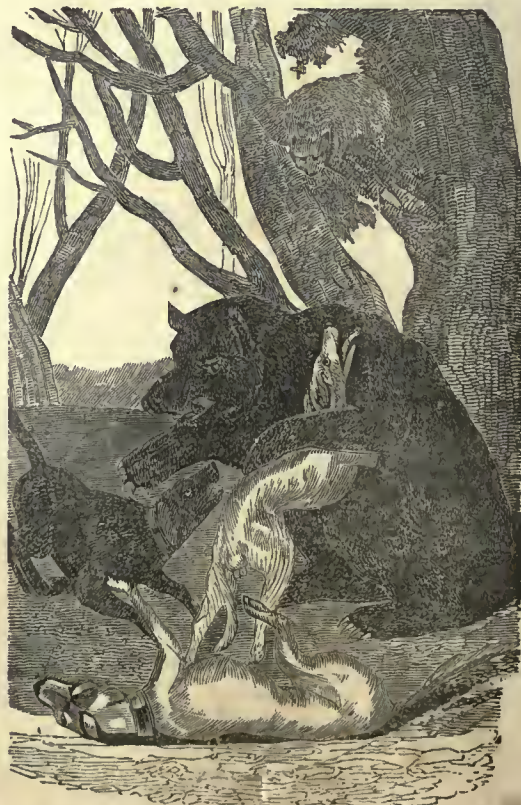


Mr. Palliser's encounter with a Grizzly Bear.

In the higher mountains of Thibet, is a kind of White Bear. Our cut represents a hunting party attacking two of them. The higher mountains of Thibet are covered with perpetual snow, and afford a suitable residence for the White Bear. The same hunters who were engaged in this expedition shot specimens of the Ovis Ammon, a very rare kind of mountain sheep, found in the same snowy regions.



Hunting White Bears in the Mountains of Thibet.



Hunting the Black Bear with Dogs.



Puma.



Indian Dog.



Grizzly Bear.



Hunting the Bear on the Ice.

In the vicinity of Hudson's Bay, the Black Bear has been observed in the month of June to feed entirely on water-insects, when the berries are not ripe.

The manner in which the Bears catch these insects, is by swimming with their mouths open, and thus they gather the insects on the surface of the water. When the stomach of the animal is opened at this season, it is found to be filled with them, and emits a disagreeable odour. The Indians, navigating the lakes in their light canoes, sometimes surprise a bear engaged in swimming after the insects. Then commences a highly interesting chase. The Bear, finding himself assailed by the paddles of the Indians, makes for the shore, or for the nearest tree standing in the water. When fairly "treed," he is easily dispatched by the arrows or rifle balls of his indefatigable enemies. The Black Bear is very indiscriminate in his feeding, and, though suited by nature for the almost exclusive consumption of vegetable food, yet, when pressed by hunger, he scarcely refuses any thing.



Indians treeing a Bear.

In this hunt, the man who is seen engaged with the Bear, came near losing his life by the panic terror of his companion. But he escaped by tumbling down a precipice, the Bear being killed by falling under.

The shooting of this animal by a single hunter is both a dangerous and difficult matter. One shot unless it penetrates either the heart or the brain will not kill. The heart is protected by thick hair; the strong muscles on the side of the head, and the firmness of the skull, which is impentable to a rifle bullet at any moderate distance, unless that bullet takes effect perpendicularly to the surface.

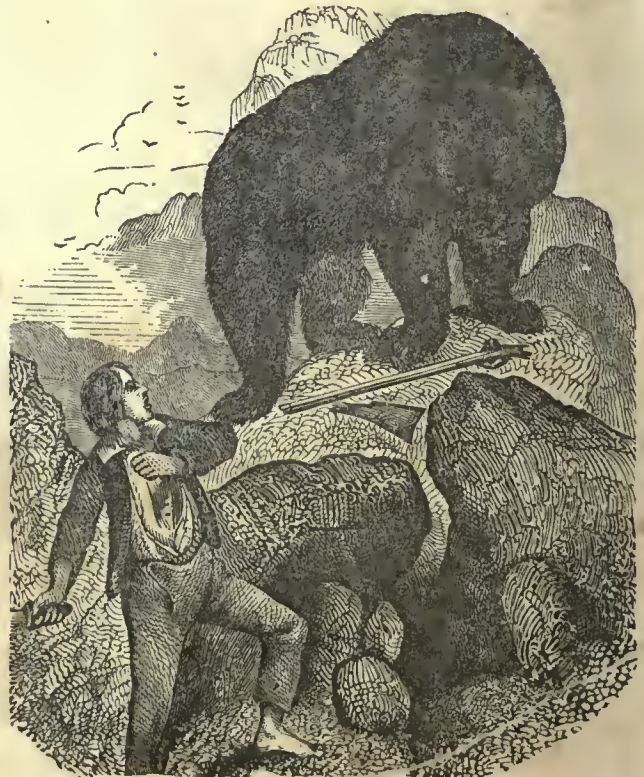
In the formation of its teeth, the Grizzly Bear has no more carnivorous character than the mildest of the other land Bears; and if we are to suppose that the number of false molars, which are small in size and speedily fall out, any indication of an uncarnivorous character, this species should have that character in greater perfection than any of the others, inasmuch as it is furnished with a greater number of those teeth.



Bear Hunt in the Pyrenees.



A close encounter with a Black Bear. The hunter escaped by his companion shooting the Bear.



A Grizzly Bear hunter in a very awkward situation. He conquered, however, with the knife.



Juggler Bear



Jaguar.



Newfoundland Dog.



Hunting the Grizzly Bear.



A Bear assailed by Bees.



Polar Bear.



A Black Bear.



Bear pursuing Goats



The Raccoon.

THE Raccoon is an inhabitant of Canada and other parts of America. It derives its name, *lutor*, from the habit it is said to possess of washing its food before eating it. It is about the size of a large fox. Its skin is very valuable, and is much sought after by American hunters, who pride themselves on their skill in shooting this active and wary animal.

The food of the Raccoon is principally small animals and insects. Oysters are also a favorite article of its diet. It bites off the hinge of the oyster, and scrapes out the animal in fragments with its paws. Like a squirrel when eating a nut, the Raccoon usually holds its food between its fore-paws pressed together, and sits upon its hind-quarters while it eats. Poultry are favorite objects of its attack, and it is said to be as destructive in a farm-yard as any fox, for it only devours the head of the fowl. Like the fox, it prowls by night. When taken young it is easily tamed, but very frequently becomes blind soon after its capture. This effect is supposed to be produced by the sensitive state of its eyes, which are only intended to be used

by night; but as it is frequently awakened by daylight during its captivity, it suffers so much from the unwonted glare, that its eyes gradually lose their sight.



Raccoon.



Raccoon.



Brown Coati.

THE Coatis, or Coati-mondis are restricted to the warmer regions of the American continent, and in dentition and general economy approximate to the raccoon. These curious animals, formerly placed by Linnæus with the Viverræ, cannot easily be confounded with those of any other group. They may be known at once by the peculiar elongation of their snout, which projects considerably beyond the lower jaw. They turn it about in all directions while in search of food, and root with it in the earth in quest of insects. The species presented in the above cut is the Brown Coati. Its colors are very variable, the brown being more or less tinged with yellow, and sometimes shaded with black; the under surface is yellowish grey; the snout is generally black, and several spots or marks of greyish yellow encircle the eye. It is a native of Brazil, Guiana, and Paraguay.



A Coati.

The Fennec is a delicate little animal, it is about ten inches long, with very long ears, small legs, and broad feet, with four toes. Each toe is armed with crooked, sharp claws. It builds its nest on trees. It was discovered by Mr. Bruce, in his travels in Africa. It is hunted for its skin.



The Fennec.

THE KINKAJOU.



The Kinkajou.

THE Kinkajou is a native of Southern and Intertropical America, where it appears to be extensively spread, and is known under different appellations. In New Granada it is called, by the native Indians, Gushumbi, and Maniviri in the mission of Rio Negro. In its manners it much resembles the coati-mondi, but differs from that animal not only in the shape of the head, which is short and compact, but also in having a prehensile tail. Of recluse and solitary habits, the Kinkajou lives for the most part among the branches of trees in large woods or forests, and is in every respect well adapted for climbing; being, however, decidedly nocturnal, it is but little exposed to the observation even of those who sojourn among the places frequented by it. During the day it sleeps in its retreat, rolled up like a ball, and, if roused, appears torpid and inactive. As soon, however, as the dusk of evening sets in, it is fully awake, and is all activity, displaying the utmost restlessness and address, climbing from branch to branch in quest of food, and using its prehensile tail to assist itself in its manœuvres. Few mammalia are more incommoded by light than the Kinkajou; we have seen the pupils of the eyes contracted to a mere round point, even when the rays of the sun have not been very bright, while the animal at the same time testified by its actions its aversion to the unwelcome glare.

In size, the Kinkajou is equal to a full-grown cat, but its limbs are much stouter and more muscular, and its body more firmly built. In walking, the sole of the foot is applied fairly to the ground, as in the case of the badger. Its claws are strong and curved, the toes on each foot being five. The ears are short and rounded. The fur is full, but not long, and very closely set. There is no animal among the Carnivora in which the tongue is endowed with more remarkable powers of extension. The tongue is long and slender, capable of being inserted into crevices or fissures, in search of insects, reptiles, or the eggs of birds. Baron Humboldt informs us that this animal is an extensive devastator of the nests of the wild bee, whence the Spanish missionaries have given it the name of "honey bear," and that it uses its long tongue to lick up the honey from the cells of the comb. Its diet also consists of birds, eggs, small animals, roots, and fruits.



Opossums.

THE Marsupial animals form a distinct group or sub-class of the mammalia. Their young, at birth, are generally received into a pouch on the abdomen of the mother, where they attach themselves to the teats, and remain till they are able to take care of themselves. It is from this pouch, or marsupium, as it is called, that the group derives its name. The Marsupial animals are almost wholly restricted to two portions of the globe, America and Australia.

The Virginia Opossum is common in most parts of North America. In its movements it is slow, and its habits are nocturnal. It resides habitually on the branches and in the hollows of trees, remaining asleep during the day. It climbs with great facility, and will hang suspended from some bough by its tail, and by swinging its body, contrive to fling itself to the adjoining branches. When first born, the young are always found adhering to the teats of the mother, and shrouded in her pouch.



Virginia Opossum.



Opossum seizing a Lizard.

MARSUPIAL ANIMALS.



Sooty Tapoa.

This Marsupial animal—the Sooty Tapoa—presents us with an example of the family termed Phalangers; but often, though erroneously, it is ranked among the Opossums. The Sooty Tapoa resides almost constantly among the branches of trees. Night is the season of its activity. Its food consists principally of fruits, buds, leaves, and the like; though insects eggs, and things of that kind, are not rejected. Its motions are slow and cautious. When in danger of discovery it will hang itself by the tail, head downwards, and remain motionless as if dead. It is about as large as a cat, and its general hue is a sooty brown. The hair has a frizzled appearance, and is somewhat soft and fine. Its tail is long, black and bushy. When feeding, it sits up like the squirrel, holding the article of which it partakes between the fore-paws. It is a native of Australia.



A Yapak

The Yapak bears no little resemblance to the otter. It is found in the rivers of Guiana, and the adjoining parts of South America. It is a small animal, not a foot in length, with a tail of six or seven inches. The customary food is small fishes, which it is very expert in catching. Its general color is greyish yellow, marked on the upper part of the body with blackish brown spots. Unlike the Opossums, it is incapable of climbing trees, and lives in holes along the banks of rivers. It is said to take its young early to the water. This curious animal is furnished with cheek-pouches of no little size and capacity. The fur of the body is close, short, and somewhat crisped and glossy. The tail, except at the base, is scaly.



Great Kangaroo.



Hunting the Wallaby or Small Kangaroo.

The Kangaroo is a most graceful animal, but appears to most advantage when only the upper part of the body is seen; its head being small and deer-shaped, and its eyes soft and lustrous. It inhabits New Holland and Van Dieman's Land. Its singular formation, peculiarly adapted to the country, calls forth a corresponding degree of ingenuity on the part of the natives, who live much on its flesh. Its method of progression is by immense leaps, from its long hind legs, assisted by its tail. The length of each leap is about fifteen feet. The Kangaroo, except when feeding, stands upright on his hind legs, and can then see over the tops of the rank herbage. Hunting this animal is a very favorite sport with both colonists and natives. The natives either knock it down with the boomerang, spear it from behind a bush, or unite together and hem in a herd, which soon fall victims to the volleys of clubs spears, and boomerangs which pour in on all sides. The colonists either shoot it or hunt it with dogs, a herd which is trained for that purpose just as we train fox-hounds. The female Kangaroo carries its young about in a kind of pouch, from which they emerge when they wish for a little exercise, and leap back again on the slightest alarm. There are many species of Kangaroo among which is one known as the Wallaby or small Kangaroo.



Chasing the Kangaroo.



Group of Kangaroos.

MARSUPIAL ANIMALS.



A Kangaroo at Bay.



A Great Kangaroo.

Mr. Angas relates the following interesting picture of the chase of the Kangaroo :

These timid creatures, which we disturbed while they were feeding, immediately took to the desert over gum bushes and the rough surface of the loose limestone rocks. It is an extraordinary sight to see them clearing the bushes, and springing high into the air ; we took after one of them, the dogs following close upon the track. At two miles the dogs closed with him, and we came up as he stood at bay. He was a noble creature, and fought desperately with his fore-paws ; a single kick with his hind feet would have laid any one of the dogs dead. It was a cruel sight to see the poor beast struggling hard for life, his large and eloquent eyes filled with tears.



Hunting the Great Kangaroo.



Greenland Seal Hunting.

THE Common Seal inhabits the coast of Europe, and is not unfrequently found in many parts of the Scottish coasts, where Seal hunting is a favorite amusement. The length of the Common Seal is about four or five feet, and its weight often two hundred and twenty-four pounds.



Walrus, or Morse.



Common Seal.



Elephant Seal.



Icelanders Hunting the Seal.

The fore-feet of the Seal are used as fins, and the two hinder feet almost as the tail of a fish, to assist and direct its course. On land the movements of this animal are very clumsy; it shuffles along by means of its fore-feet, or rather paddles, and drags its hind feet after it.

When surprised, basking on the shore, it scrambles off towards the water; but if intercepted, dashes at its antagonist, oversets him, if possible, and makes its escape as fast as it can. When taken young, it is easily tamed.

The Elephant Seal is found in the Atlantic, Pacific, and Southern Oceans. It is much

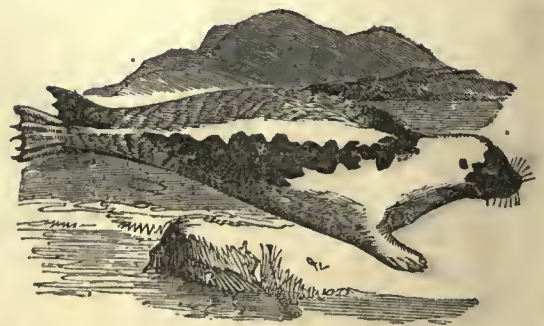
larger than the Common Seal, being from twenty to thirty feet long. It derives its name from the long snout, something like the proboscis of the elephant, or rather the tapir, which it thrusts forward when angry, and snorts loudly. Only the males have this proboscis, and they do not attain it until they are three years old. Although its appearance is very formidable, it does not attempt to attack men; but if it cannot frighten them by opening its mouth and displaying its teeth, it makes off towards the water, but with great deliberation, as when in good condition it is so fat that its body trembles like a mass of jelly, and will furnish seventy gallons of oil. This oil is the principal object of the South Pacific Seal fishery; but the skin of this Seal is also very valuable for its strength, and is used in making harness. The Seal skin is often used as fur. It is a migratory animal and changes its residence several times in the year, the first migration taking place in June.

There are many Seals known, among which are the Sea Leopard, a spotted species; the Harp Seal, so called from the markings on its back something resembling a lyre; and the Sea Lion.

In Greenland, hunting Seals is an important occupation. No man can pass for a true Greenlander who cannot catch Seals. To the Greenlander, then, the sea is his pasturage, where his flocks and herds are fed; the sea is his hunting-domain, where, in his light kajak, or Seal-skin canoe, he skims over the waves.



Icelanders Hunting Seals on the Ice.



Harp Seal.

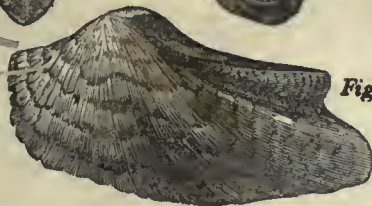
Fig. 2.



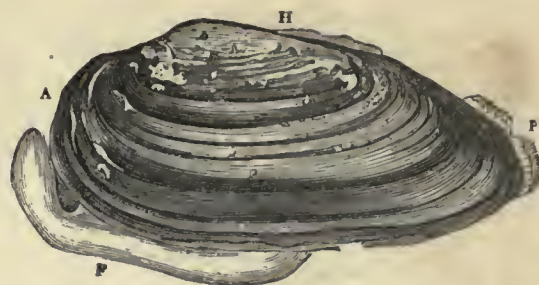
Fig. 3.



Fig. 1.



Noah's Ark. Fig. 1 Side view. Fig. 2 The shell, with the hinge and umbones presented. Fig. 3 A single valve, shewing the hinge. *a a* The umbones. *b* The margin.



Unio Pictorum. *A* Head of the shell. *P* Tail, with two tubes. *H* Hinge. *F* Foot.



Cyclas Cornea.

The class entitled Conchifera, are mostly bivalves, though a few of its species are multivalves, and a few others of completely anomalous configuration. They are *acephala*, or headless, the entrance to the stomach being buried between the folds of the mantle. This class is best distinguished by the shell, which is composed of particles of lime exuded from the surface of the mantle, in combination with a gluey secretion which holds them together. Each valve consists of a number of layers, of which the outermost is the smallest, each inner one projecting beyond the one covering it.

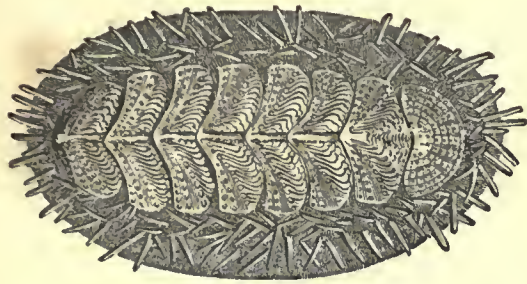
The valves are connected by hinges of various kinds, together with an elastic ligament, which serves at once to bind together and to keep them a little apart, which is their natural position. If the animal wishes to draw the valves tightly together, it does so by means of the adductor muscle, which is attached to the interior of both valves.

Many of this class have a sort of foot, a fleshy, muscular organ, used for locomotion, and for sundry purposes besides, though in others it is wanting.

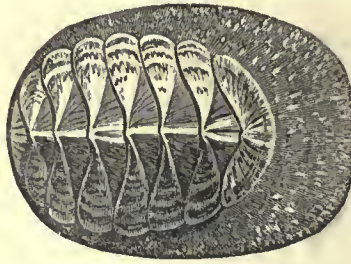
The *Cyclas Cornea* is a bivalve. The mantle, which belongs to all the various species of the Conchifera, is, in this animal, prolonged posteriorly into a twofold tube, or syphon, one branch of which is designed to admit the water, which contains the creature's food, as also the oxygen, by which its blood is renovated, and the other serving to carry off the excrementitious matters. Through another aperture in the mantle, it protrudes at will, its large, fleshy foot, which serves not only for locomotion, but for scooping out a retreat in the sand or mud, where it sometimes burrows, projecting its double syphon from the mouth of its hole, for the twofold purpose of breathing, and of discharging waste matter.

The *Unio Pictorum* is a fresh-water bivalve, and though larger than the *Cyclas Cornea*, and differently shaped, the general particulars of its structure are so closely analogous, that we need not here repeat them. The observer will note, in the plate, that *A* is the forward extremity of the shell; *P* the hinder extremity, with the two syphons there visible; *H* the hinge uniting the valves; and *F* the foot, extended nearly to be full.

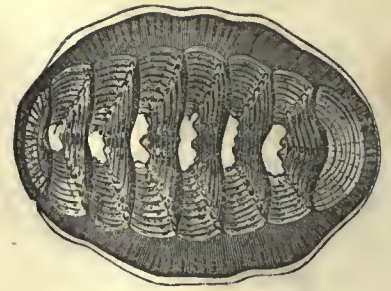
The Noah's Ark, a bivalve, is a native of the Atlantic Ocean, and the European seas. It differs not, in its essential characteristics from the two already described. The shell is boat-shaped, rather thick, equi-valve, though not equi-lateral; the form is elongated, and somewhat oblique; the umbones are distant, frequently a little curved forward; the hinge is straight-lined, with numerous small interlocking teeth, and



Chiton Spiniferus.



Chiton Blainvillii.



Chiton Chilensis.

very complex series of ligaments and muscles, which reminds the naturalist of those which unite and move the different segments in the articulated animal.

The Chiton Chilensis is found in the crevices of rocks, and under stones. Its name is derived from its locality in the neighborhood of Valparaiso, in Chili.

The Chiton Blainvillii is remarkable for a sort of fringed border. It is found on Inner Lobos Island, on the coast of Peru.

The Chiton Peruvianus is of a dirty-yellowish green, or yellowish-brown color, inside white. Its border is set with thick, coarse, black hairs. It is found under stones, at low water, in Valparaiso Bay.

The Chiton Spinosus is found in the South Seas. Its border is wide, and beset with long, sharp, blackish spines.

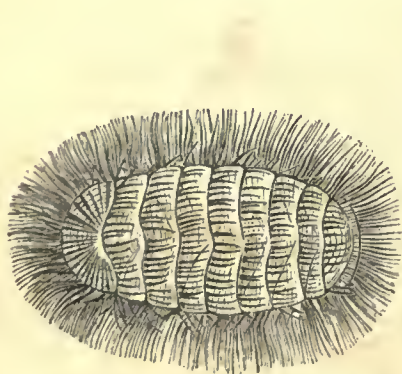
The Chiton Spiniferus is found in Chili. It has a thick, broad border, set with blunt spines.

The Chiton Magnificus grows to the length of five inches. It is found in Chili, often in very exposed situations, attached to rocks beaten by the waves.

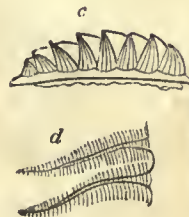
Our engraving of the Chiton Squamosus affords a view of several parts of the animal. In the engraving, *a* represents the animal and shell, as seen from above; *b* the animal seen from below; *c* is a side view of the shell and animal, creeping along the rocks, or adhering to them; and *d* is a portion of the branchiæ magnified.

In the species Chitonellus the border is highly developed, and the valves very small. They are more or less cylindrical, or vermiform, and the valves being very small, and in some species almost entirely hidden under the skin of the border, give the animal an almost naked appearance. The Chitonellus Lævis and the Chitonellus Larvæformis are examples of this species.

The position of the Chitons in the arrangements of the Mollusca, is considered to be near that of the Limpets, (Patella.)



Chiton Peruvianus.

*a* Chitonellus Lævis.*b* Chitonellus Larvæformis.

Chiton Squamosus.





Common Whelk.



Common Cone.



Royal Staircase Wentletrap.



Sea Ear.



Money Cowry

The Royal Staircase Wentletrap affords us an excellent example of the Turbinidæ. It is a native of the Chinese and Indian seas, and was formerly so scarce that a specimen two inches in length would sell for a hundred pounds sterling. Even now, a fine specimen cannot be obtained under six or seven pounds.

As an example of the large family of Cones, we give the Common Cone, whose beautiful marbled color, and elegant shape renders it a most attractive shell.

The Cowries are not less celebrated for the elegance of their form, and the beauty of their markings, than for the curious circumstance that one species is used as current coin in Guinea and Bengal, thus being employed for the same purpose by two entirely distinct races of men, situated in different quarters of the globe. Their value is of course small in proportion to gold or silver. At the present time a rupee in Bengal is worth three thousand two hundred Cowries, the value of the rupee being two shillings three pence, or about fifty cents.

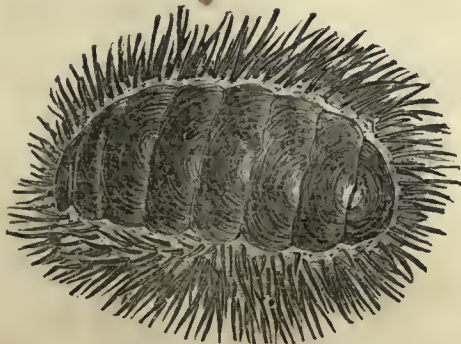
The Buccinidæ are so named from their fancied resemblance to a trumpet. The Common Whelk is every where abundant on the British Coasts, and is taken in such profusion that it is largely exported for food, and may be seen on the street stalls of London exposed for sale, like the oyster and periwinkle.

The proboscis of this creature is of a most singular structure, and by means of the numerous teeth with which it is armed, it is able rapidly to bore its way through shells, and then to feed upon the unfortunate inmate. The hermit crab often takes possession of the empty shells of the Whelk.

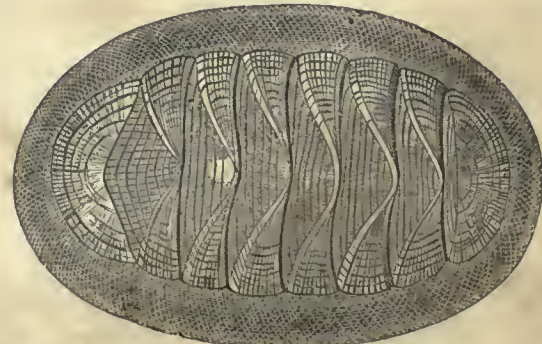
The famous Tyrian purple was obtained from one of the Buccinidæ, *Purpura imbricata*.

In the Haliotis, a very extensive genus of Gasteropoda, the shell is slightly twisted, and from a faint resemblance it is thought to bear to the ear of a quadruped, it has been called the Sea Ear. Some of the species are very beautiful.

Chiton, a Greek word signifying a shield, is applied to a family of the class Gasteropoda. The name is an indication of the general form of the shell, which resembles a shield. They are closely allied to the limpets. The species found in our northern seas are small, but within the tropics they attain a large size. Their shell is composed of a number of plates, arranged behind one another with great regularity by a



Chiton Spinosus.

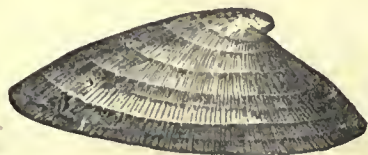


Chiton Magnificus.

MOLLUSCA.



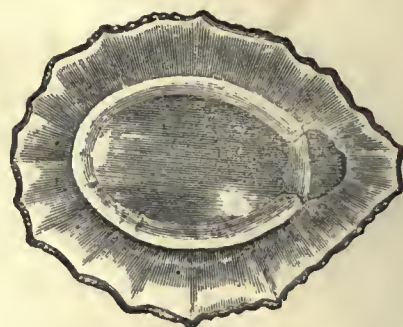
Patella Scutellaris.



Patella Compressa.



Patella Cymbularia.



Patella Cochlearia.

Of the genus *Patella*, or Limpet, the general characteristics are, that they have a body more or less circular, conical above and flat beneath, with a large, oval foot, which is thick and overlapped, on its whole circumference, by the edges of the mantle, which are fringed. The shell is oval, or circular, with a summit upright, or curved more or less forward. The cavity is simple, and more or less deep, and the border is entire and horizontal.

The *Patella Vulgata* is a species of the above, whose summit is obtuse, vertical, nearly medial, and whose shape is conical. It abounds in the English Channel, and is found on the coasts of the European seas generally. The varieties of this species are innumerable.

In the *Patella Deaurata* the shape is somewhat less conical than that of the above, and the summit is located a little forward of the position of that, with a slight inclination in the same direction. Its resorts are the Straits of Magellan, and the Falkland Isles.

The *Patella Compressa* is a species, oval in form, elongated and compressed at the sides. Its locality is the Indian seas.

In the *Patella Scutellaris*, the summit is sub-anterior, and very little developed, and the general form is perfectly flat, or depressed.

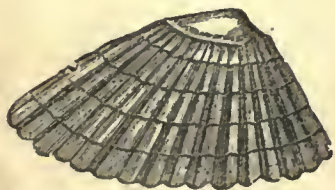
The *Patella Cochlearia* is also a depressed, or flat-shaped species, whose summit is scarcely indicated at all, and which are much narrower before than behind.

The *Patella Pectinata* is an oval species, with a well marked summit, manifestly inclined forward, and sub-marginal, and with a border slightly convex in the middle. Its locality is the Mediterranean sea.

The *Patella Cymbularia* is oval-shaped, delicate, nacreous, and with a festooned border, and its summit is still more distinct and marginal than that last described.

The Limpets inhabit all regions of the globe, except the arctic regions. The Common Limpet may be found on every rock, and large stone at the sea-side. The variety of the modes in which it attaches itself to the rocks, is well worthy examination. All, who have seen this animal alive, know how tenaciously it fixes itself to the rock. It does this by producing a vacuum between its body and such rock, the consequence of which is, that atmosperic pressure keeps it so tightly fixed to the rock, that a strong knife-blade is required to detach it.

Sometimes a large shell is picked up, covered with Limpets, which adhere to it firmly, in defiance of the rolling of the waves, and all the agitations to which it must be subjected.



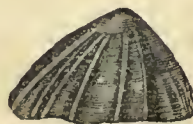
Patella Deaurata.



Patella Pectinata.



Patella Vulgata.



Common Limpet.



Hunting the Walrus, or Morse.

or heaps of ice, and also for digging up the sea-weeds on which the animal mostly subsists. It will also eat shrimps and young Seals.

The Walrus is often hunted for the sake of its oil, its flesh, its skin, and its teeth. It is generally found in troops, and if one is wounded, its companions rush to its rescue and attack the enemy with their sharp tusks, which they have been known to drive through the bottom of a boat. Their skin is so strong and slippery that it is very difficult to drive the harpoon through it, and even a sharp weapon frequently glides off without injuring the animal. The great enemy of the Walrus is the Polar Bear, who does not always venture on an open battle, as when a combat takes place, the Walrus defends himself most vigorously with his curved tusks and often inflicts fearful gashes on the bear, forcing it to abandon the contest.

The head of this animal is very small in proportion to the remainder of its body, and often deceives people as to its size, which is difficult to ascertain without examination. The expression of its countenance is very ferocious, principally on account of the enormous size of the upper lip and the thick bristles with which it is covered. The length of the Walrus is about fifteen or sixteen feet, and it yields from twenty to thirty gallons of excellent oil.



Common Seals.



A Walrus.



Seal Hunting in the Shetland Isles.

An interesting account of the habits of the Seal, as observed in the Orkney and Shetland Islands, is given in the "*Fauna Orcadensis*" of the Rev. George Low, minister of Birsá and Haray, from which we extract the following particulars.

"Seals are very numerous in these parts, especially in the desert isles or sea-rocks that are separated from the land; there they lie in droves when the sea is low, and in season bring forth their young.

"The Seal swims with great rapidity, and, before a gale of wind, is full of frolic, jumping and tumbling about, sometimes throwing itself entirely out of the water, and performing many awkward gambols, at last retiring to its wonted rock or cavern, and there remaining till the storm is over. Seals seem to have much curiosity. If people are passing in boats they often come up very close, stare at them, and follow them a considerable time. If the people are speaking loud, they seem to pay much attention, and to exhibit some surprise. The Church of Hoy, in Orkney, is situated near a small sandy bay, which is much frequented by these animals; and Mr. Low used to observe that when the bell rung for divine service, all the Seals within hearing would swim directly for the shore, and would remain while the bells continued ringing, looking about with much appearance of wonder, but without alarm."

Numbers of Seals are yearly caught upon the northern coasts, both with nets and shot, for the sake chiefly of the skins and oil. Mr. Low was credibly informed that in North Ronaldsha they were taken also for eating, and that very good hams were made from them. He had seen large numbers of Seals cut up, and had no doubt that the young ones might eat tolerably well; but the flesh of the old ones is coarse-grained and black, and must be very indifferent food. We are not so much surprised as Mr. Low that the people of Ronaldsha should eat Seals. He was probably aware, from Pennant, that Seals formerly found a place at the tables of the great even in England, as appears from the bill of fare of the famous feast given by Archbishop Neville, in the reign of Edward IV., which states that several were provided on that occasion. Mr. Low also informs us that in his time, (he died in 1795,) a ship went annually from Pomona to Soliskerry, and seldom returned without two or three hundred Seals. She was manned with between thirty and forty men.



Seal Hunting, in Scotland.

In Scotland, Seal hunting is followed for pleasure as well as profit. From the interesting account of a gentleman who spent a day in the sport, we give a few extracts, showing the mode in which it is practised:—"One fine October morning," he writes, "I accompanied a military friend in quest of the Seals. We embarked in a boat from Mull. The major's body-servant carried two double-barrelled rifles, and had brought an oblong wooden box, fitted with a square piece of glass at one end, to be employed in searching below the surface of the water for any dead Seals that might be lost. The boat was manned by four stout Highlanders, who rowed us among certain small rocky islands with which the sea in that part is studded. In a nook of one of these islands we put the boat, and leaving the crew, with an injunction to remain perfectly still, ascended the craggy side of the land; behind a fragment of rock the keen sportsman crouched with rifle cocked, his eye ranging over the expanse, his whole figure and expression of countenance denoting eagerness mingled with caution. There was a long silence of expectation, and the whole scene, as I lay watching the surface of the water, struck me as one of the wildest and most interesting that I ever witnessed. The sea was calm as a lake, the sun shining full upon it; lofty ridges of heather-covered hills, now glowing with warm light, and then subdued by passing shadows, formed a romantic background. The shores were lined by steep cliffs and reefs of jagged rocks, jutting out far into the sea, and the islands before-mentioned, on one of which I was seated, varied the scene still more with color and picturesque forms. The Seal in such a calm scene ventures from the ocean-depths to inhale the air, and seeing no object to alarm, sports above the wave, or swims to and fro like a dog, occasionally landing on pieces of rock, and basking at his ease. Several of these singular animals soon showed their heads above the water, the sportsman waiting until they approached within shot. It is very difficult to hit them in this way, but I have seen experienced marksmen kill them from the boat at the extreme limit of a rifle's power. At one hundred yards they are frequently killed."

The tenacity of life displayed by the Seal has often been noticed as being very wonderful. Yet it is a singular fact, that a slight blow over the nose puts an immediate end to the animal, when a rifle ball, in some apparently vital part of the body, has failed to kill it.

THE Jerboas are celebrated for their powers of leaping. Their long hind legs enable them to take enormous leaps, during which their tails serve to balance them. Indeed, a Jerboa, when deprived of its tail, is afraid to leap. At first sight the Jerboa seems to alight on its hind feet, as well as spring from them, but the fact is, that it alights on its fore-feet and draws up the hind legs ready for the next leap with such rapidity that the eye can scarcely follow the movement. The foot of the Jerboa is defended by long bristly hairs, which not only give the creature a firm hold of the ground for its spring, but also defend the foot from the burning soil.



African Jerboa.

The timidity of the Jerboa is very great, and on the slightest alarm it instantly rushes to its burrow, but if intercepted, skims away over the plain with such rapidity that it seems to fly, and when at full speed a swift greyhound can scarcely overtake it. Grain and bulbous roots are its chief food; while eating, it holds the food with its fore paws, and sits upright on its haunches, like the squirrels and marmots.



A Hedgehog.

The Hedgehog is remarkable as being guarded with spikes. These spikes are fixed into the skin in a very beautiful and simple manner. When annoyed it rolls itself up, and the tightness of the skin causes all its spikes to stand erect.



An Asiatic Jerboa.



African Porcupine.

THE Porcupine found in Europe, but said to have been originally brought from Africa, is about two feet in length, has a short truncate head, rough tongue, upper lip divided, and large whiskers. Their distinguishing character is their armour, consisting of long hollow spines or quills, about the size of a goose quill, annulated black and white, closed at the extremity, and generally running out into a fine point.

The Desmans is of a blackish color, and feeds on fishes, worms, and &c.

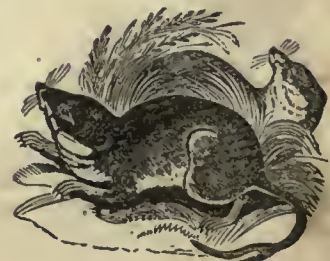
The Shrew lives in holes which it excavates in the earth, is nocturnal in its habits, and preys on insects.



The Common Porcupine.



The Desmans.



Shrews.

THE MARMOT.



Prairie Dogs and burrowing Owls.

THE Prairie Dog is a species of the Marmot found in the prairies of the West, and the Burrowing Owl resides exclusively in the villages of the Marmot, or Prairie Dog, whose excavations are so commodious as to render it unnecessary that the bird should dig for himself, as he is said to do, in other parts of the world, where no burrowing animal exists. These villages are very numerous, and variable in their extent, sometimes covering only a few acres, and at others spreading over the surface of the country for miles together.

Marmots may be seen in England, carried about by the Savoyard boys, who catch them when young and tame them.



Alpine Marmot.



A Savoyard boy with his Marmot.



The Skunk.

AMONG the smaller flesh-devouring animals, there is a family, peculiar to the American continent, to which the name of Skunks has been given. The most remarkable characteristic of this family is the capability of its members to eject a liquid odor, intolerably offensive both to man and beast. The Skunk proper is about a foot and a half in length, with a large and long bushy tail. The general color is brownish black. It burrows among the roots of trees, or rocky places, and feeds on birds, rats and other animals.

The Wood-chuck is an inhabitant of that portion of the western hemisphere situated within the middle latitudes. It is covered with short, coarse hair, of a dirty grey color.



Wood-chuck.



Chinchillas.



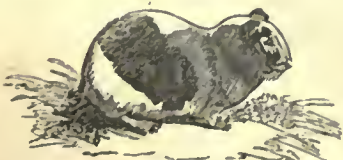
Chinchillas.

THE Chinchilla is about the size of a small rabbit; its large ears are half naked, and it is covered with the softest of all furs, except on the tail, where the hairs are harsh. Its color is grey, the fore feet have four toes, with the vestige of another; those behind have three. It lives in the mountains of South America. The Viscacha is a variety of the Chinchilla, about the size of the rabbit. It is also found in South America.

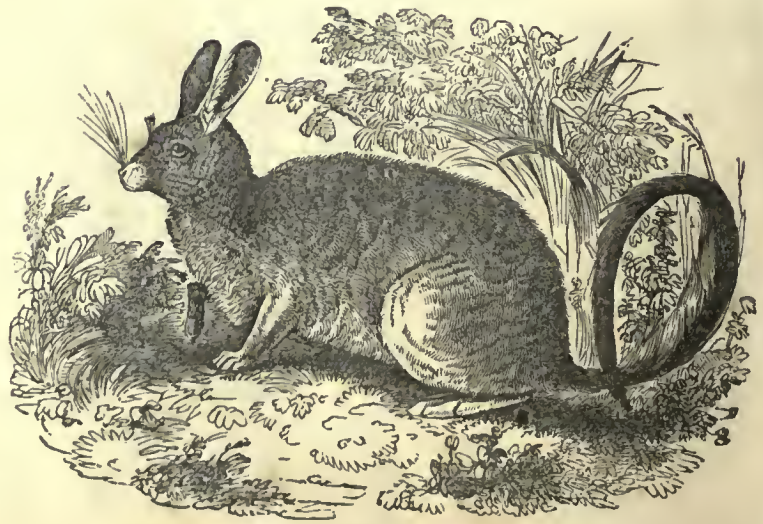
The Agoutis much resemble hares and rabbits, and are inhabitants of the West Indies, and the warm parts of America. That species which is called the Hare of the Pampus has larger ears than the others, and a very short, naked tail. Their flesh is good eating.



An Agouti



A Guinea Pig.



Viscacha.

MARMOTS.



Alpine Marmots.

Some of the species of Marmot eat flesh, as well as insects and grass. They have short legs and tails, flattened heads, and pass the winter in a state of torpor, hiding themselves in holes, the mouths of which they stop up by a quantity of hay.

The Capromys is like an enormous rat, the size of a hare, and comes from Cuba, where, with the agouti, it forms the principal game of the inhabitants.



Capromys.



Common Rat.



The Hamster.



A Water Rat.



An Aye-Aye.

THE Aye-Aye presents a singular and frightened appearance; with its long, slender, middle toe, it conveys food to its mouth. Its skull resembles that of *Quadrumana*; it is as large as a hare, is of a chesnut color, has a long, thick tail, naked ears, is nocturnal, moves slowly, lives in holes, and is a native of Madagascar.

Hamsters are very destructive, from the quantity of grain which they amass, and with which they sometimes fill holes seven feet long.

Ondatras are like *Arvicolæ*, and the Musk Rat of Canada belongs to them. It builds mud huts on the ice, in which several live together, and when the frost closes the entrance to their dwellings, they eat one another. The Water Rat belongs to the division *Hypudæus*; one of the species lives under ground, like a mole, and fills its magazines with pieces of wild carrot.

The Field Mouse is as great a pest in the open air as the common mouse within a house. It not only devours the corn, but strips the bark of young trees, doing great mischief.



Field Mice.



The Musk Rat.



Beavers and their Habitations.

BEAVERS belong to the family of Rodentia. Their life is wholly aquatic; they chiefly eat bark and other hard substances, and cut down trees with their strong incisors. They have large glandular pockets under their tail, which produce a pomatum of a strong smell, called *castoreum*, by the druggists. Their size

exceeds that of the badger. They select those waters for their dwellings which are too deep to be frozen to the bottom, and, as often as possible, running streams; and, by cutting wood above the current, it is carried down by it to the place which they wish to inhabit. They keep the water at an equal height by a dam made of branches mixed with stones and mud, which they strengthen every year, and which at length vegetates and becomes a hedge. Each hut has two floors, and serves for two or three families: the upper, which is dry, for the animals to live in.



Hunting the Beaver.

THE SQUIRREL.



Grey and Black Squirrel.

AMONG our American Squirrels the Grey Squirrel is the most remarkable. It is subject to much variation in color. Sometimes it is whitish grey, at other times it is much clouded with yellowish. What we call the Black Squirrel seems only a variety of the Grey, having the same form and habits, and differing only in color. It is the only Squirrel deemed worthy of notice as game. It is much sought by boys, who catch it in box traps and keep it in the rolling cages.

The Red Squirrel is found in the same localities as the Grey, and is about half as large.

The Flying Squirrel, still smaller, is a beautiful animal, with very brilliant eyes, and is a favorite pet with boys, who carry it to school in their pockets. A membrane extending from the fore to the hind legs serves to assist its flying.



Flying Squirrel.



Grey Squirrel.



Striped Squirrel, or Ground Squirrel.

An American and an Asiatic variety of this species have been described; but it is probable that they inhabit a continuous zone in the two continents, from Carolina westward to the central longitudes of Siberia, with only the interruption of the Strait of Behring and the narrow part of the North Pacific. The American variety is a very small animal, not above half the dimensions of the common Squirrel of Europe, though resembling it in color, only there is a yellowish white band along each flank, bordered at each side with a stripe of black; and there is another black stripe down the ridge of the back. The hairs on the tail are much shorter than those on the other Squirrels, so that that organ is but ill adapted for acting as a parachute. The Asiatic variety is described as being rather larger in the body, being about five inches in length, but the tail is only three. The general color of the upper part is tawny-brown, marked with stripes similar in color, in number, and in arrangement, to those on the American variety. The shoulders and the fore paws are dull tawny, and so is the rump between the lines. The outsides of the thighs, the hind feet, and the hair of the tail, are bright russet. This variety extends over a very great range of longitude in the north of Asia, indeed over the greater part of Siberia. The species, whether as American or as Asiatic, is intermediate in its habits between the hamsters and the Squirrels properly so called. The individuals are rarely, if ever, found climbing trees; they are ground animals, collecting the seeds of various kinds of plants from the surface of the earth, and making use of their cheek pouches to carry the food to their magazines. They nestle in burrows, which they usually construct under bushes, or the spray at the roots of trees. The burrow generally has two entrances and two chambers, one of which is the dwelling and the other the store; and the spray, whether of bush or of tree, under which they are placed, helps to defend both against the rains. With their collected store in the magazine, they contrive to live tolerably well under the snow, which lies long above their dwelling in the inclement season of the year.



Palm Squirrel.



Common Squirrel.



Malabar Squirrel.



Common or European Squirrel.



Red Grey Squirrel.

The common or European Squirrel is easily domesticated, and is very amusing in its habits when suffered to go at large in a room or kept in a spacious cage; but when confined in a little cramped box, especially in one of the cruel wheel cages, its energies and playfulness are quite lost. The color of the English Squirrel is a deep reddish brown, and its tail so large and bushy as to shade its whole body when carried curled over its back, from whence it derives its name of *Sciurus*, or Shadow-tail.

The Malabar Squirrel is the largest animal of the whole genus, being as large as an ordinary-sized cat. The top of the head, a band along the cheek, the middle of the back, and the flanks, are very bright reddish brown; the shoulders, the rump, and the thighs, are pure black; and the muzzle, the lower part of the neck, the breast, the belly, and the under sides of the hind legs, are bright yellow. It is one of the brightest in its colors of all the Squirrels, though, like most of the rest it is subject to considerable variations. It occurs in several of the richly wooded districts of India, but is said to be most plentiful on the west of the Malabar coast, to reside chiefly among the palm trees, and to be particularly fond of the milk of the cocoa nut.



European Squirrel.



The Black Squirrel.



A Box trap for Squirrels.



A Dead Hare.



A Rabbit.

THE Hare, comprising several species, is spread over almost the whole world. The common Hare has two incisors on each jaw, those in the upper doubled; its ears are longer than its head, and black at the tips; his large, prominent eyes are so placed, that it can almost see behind when it runs; its fore legs are shorter than its hind, and its tail is very short; the inside of their mouth and under part of the feet are furred, like the rest of the body. Has its form on the ground.

The Rabbit has ears shorter than the head, dark-colored towards the lips; in a wild state, the color is generally uniform, but when domesticated, which it is more easily than the Hare, it varies greatly; it inhabits the temperate and warmer regions of Europe, Asia, and Africa, and is common on the British continent and islands; it lives from eight to nine years, and breeds seven times a year, bringing forth four to eight at a time, which are full grown in six months: its flesh is white and delicate, and its fur of some value.



Hunting the Hare.



A Hare.



White Wild Cattle of Chillingham Park.

THE Ox is spread widely over the earth, scarcely any country being without its peculiar breed. Every part of the Ox is of value. The young Ox is called a calf, and is quite as useful in its way as the full grown Ox. The flesh is called veal, and by many preferred to the flesh of the Ox or Cow, which is called beef: jelly is made from its feet. The stomach is salted and dried, and is called rennet. Cheese is made by soaking a piece of rennet in water, and pouring it into a vessel of milk. The milk soon forms curd, which is placed in a press, and the watery substance, called whey, squeezed from it. The curd is colored and

salted, and is then cheese. At Chillingham Park, in England, there is a breed of wild cattle, apparently descendants of the original race that overran England in former years. They still retain their wild habits, and when any one of them must be killed, thirty or forty men go out armed with rifles. A keeper mounted on a very swift horse separates the victim from the herd, and drives it by the concealed marksmen, who speedily lay it prostrate. The color of the Chillingham breed is always white with dark red ears.



English Bull.



Wild Bull Hunting in the Alemedejo.

In Spain and Portugal, where extensive wilds and forest lands afford ample pasturage, large herds of Oxen, born in freedom, wander uncontrolled, and untroubled except by man, from whom they flee with precipitation, till roused to fury by his assault, when they attack in turn, and bear upon him with resistless impetuosity. It is from these herds that the Spaniards and Portuguese select the fiercest and boldest for their bull-fights; while others are tamed, and broken in for the ordinary purpose of husbandry. We may easily imagine the excitement produced by the chase and capture of a herd of these animals. Our engraving represents such a scene in the forest of Alemedejo. The Bull-fights of Spain have often been described.

The Bull is turned loose in a large arena, where several men, armed with darts and spears, goad him into madness. After these have fought the Bull, one of their number called a *Matadore*, steps forward and asks permission to slay the animal. If the Bull has done his duty by killing two or three horses, or a man, which last is rare, the people interfere with shouts, the ladies wave their handkerchiefs and the animal is saved. These sanguinary spectacles are the delight of the Spanish people.



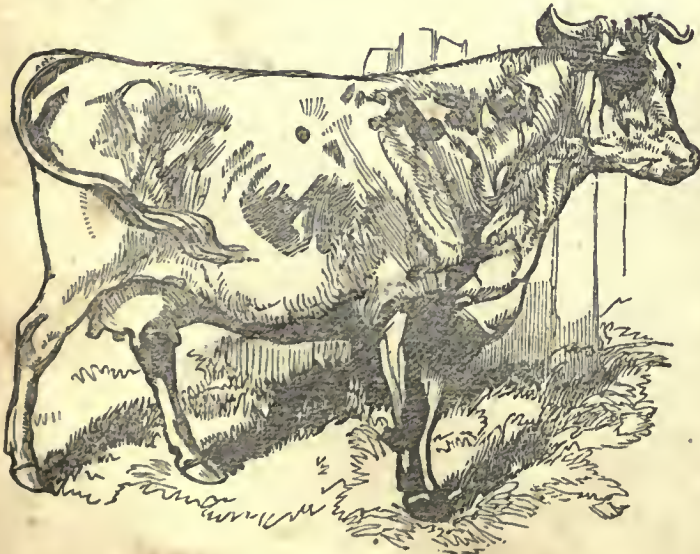
Spanish Bull-Fight.

THE OX.

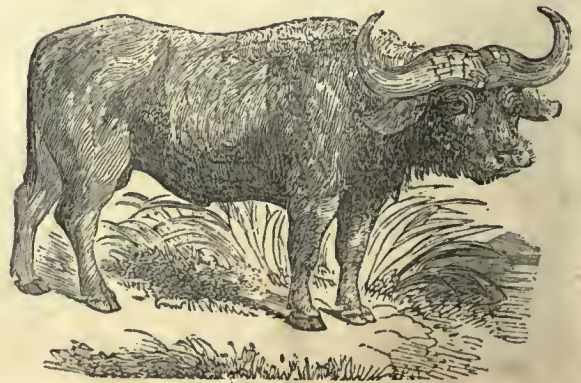


Bullocks and Bullock Wagon of South Africa.

In South Africa there is an excellent breed of domestic cattle. The Bullocks are of large size, with the horns long and sweeping forwards and upwards.* The large engraving represents a scene on the banks of the Vial river, South Africa, illustrative of the uses of the Ox in that country, where its services as a beast of draught and burden are of the greatest importance. Wagons drawn by Bullocks, are the ordinary travelling vehicles of South Africa.



English Domestic Cow.



Cape Buffalo.



Hunting Wild Cattle on the Pampas.



The Zebu.

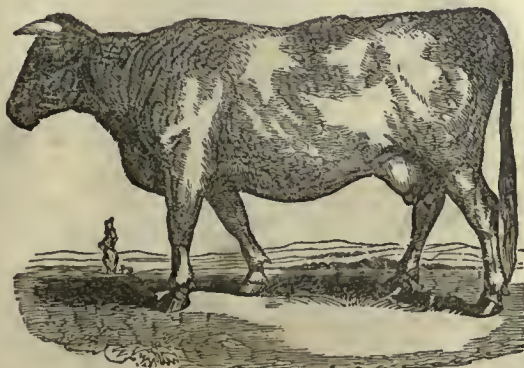
The Ox was one of the first of domestic animals carried over to America by the early Spanish settlers. There it has multiplied and spread, and, indeed, in some degree recovered its original independence. Herds of wild Oxen roam the pampas or plains of South America, where they are hunted and slain for their hides.

The Cape Buffalo is found nowhere but in Southern Africa. Its general aspect is shaggy and formidable. It has never been tamed, and the males are dangerous to come near. Its temper is depicted in its lowering eye, and the molevolent expression of the countenance, to which the position of the overshadowing its fiery eyes not a little contributes.

The Zebu, is spread over the whole of Southern Asia and the Eastern coast, India, and different parts of Africa. In size it varies from that of a large Dog to that of an Ox, the wild being larger than the tame. They are particularly remarkable for a fatty hump between the shoulders, which in some, weighs about fifty pounds. In Africa, the larger kind supplies the place of the Ox, both for labor and food; in some places of India it is rendered serviceable, as a saddle-horse.



Common Domestic Cows.



Yorkshire Cow.



Cape Buffalo.

THE OX.



Furious charge of a Cape Buffalo.

When pursued by the hunter the Cape Buffalo tears through the thicket and up the mountain side with surprising impetuosity. Not unfrequently, however, it turns upon its pursuer and charges him with the greatest fury. Many are the fatal accidents and narrow escapes from death recorded by the travellers who have penetrated the country near the Cape of Good Hope.

That singular animal the Yak, or grunting Cow of Tartary, is a small species, the tail of which is covered with long fine hair; it has also a mane on the back, and is from the mountains of Thibet. The standards used by the Turks to distinguish their superior officers were formerly made of the tail of the Yak.

The Musk Ox, has been considered as holding an intermediate station between the Ox and the sheep. They belong to the treeless and barren lands of North America. The hair is long and somewhat curled, of a brown color. When fat its flesh is tolerable, but at certain times both that of the Bulls and Cows smells strongly of Musk.



Musk Ox.



The Yak.



Combat between a Buffalo and a Tiger.

The Common Buffalo has been long domesticated in India, where its services as a beast of draught and burden render it extremely valuable. It differs materially in its general aspect from the common domestic Ox, being a heavier and clumsier, as well as a more powerful animal. Its massive body is supported on short, thick, solid limbs; the hide is coarse and dense, and covered sparingly with black, wiry hair. The horns lie back, turning up sideways, and often grow to a large size. In its native regions the Buffalo is a formidable animal, and capable of contending with the tiger, which it often foils in the deadly strife. When excited, the beast rushes desperately on

its foe, strikes him down with its horns or forehead, kneels upon him, crushing in his chest, and then tramples and gores the lifeless body.

The European Bison is an inhabitant of the great forest of Bialowizza, in Lithuania. Thickets near the swampy banks of rivers are its favorite places of resort. Its strength is said to be enormous, and trees of five or six inches in diameter cannot withstand the thrusts of old bulls. It is afraid neither of a wolf nor of a bear, and assails its enemies both with its hoofs and its horns. An old Bison is a match for four wolves. Packs of the latter animal, however, sometimes hunt down even old bulls when alone, but a herd of Bisons has nothing to fear from any rapacious animal.



European Bison attacked by Wolves.



A Buffalo.



Indians hunting the Bison.

The American Bison, formerly spread over almost the whole of North America, still roams in countless herds over the regions watered by the Arkansas, Platte, Missouri, and other large streams west of the Mississippi. It is of powerful frame, and exceeds in bulk the ordinary race of cattle. The head is huge, ponderous, and carried low. The neck, withers, and chest, are covered with a profusion of long, shaggy hair, contributing to render the appearance of the animal wild and terrible. The flesh of this animal is accounted excellent, the tongue and hump being especially delicious. The chase of it is therefore assiduously carried on both by Indians and whites, and the vast herds of the west are being so incessantly thinned, that the time is probably not far distant when the American Bison will be as rare and as limited in its range as the Bison of Lithuania.



A Bison



A Group of Bisons.



Bison Hunting.

Endowed with the sense of smell in great perfection, wary, and fierce, the American Bison is not to be easily surprised by the hunter, and, when surprised, the chase of it is not without peril. On the approach of an enemy, the vast herd moves off, with a tread of thunder, in rapid flight. But, if one be wounded, the hunter's life is in jeopardy, for, turning in an instant, the infuriated animal will rush on its assailant with headlong impetuosity. Mr. Catlin relates a story concerning one Monsieur Chardon, who having wounded a bull Bison, was about to discharge a second shot, when the animal turned suddenly and planted its horns full in the Frenchman's unlucky horse, which was going at full speed. The horse was sadly gored; the rider made a frog's leap of some twenty yards or more over the bull's back. He rose up, and fainted; but fortunately the Bison was dead, and the hunter, recovering, found that he had been more frightened than hurt. But all Bison hunters do not escape so well, in some instances they perish.



Perils of Bison Hunting—Narrow Escape of Monsieur Chardon.



Brahmin, or Sacred Zebu.



Domestic Cow.



Indians in Wolf-skins Hunting Bisons.

The favorite Indian method of killing the Bison is by riding up to the fattest of the herd on horseback, and shooting it with an arrow. The imposing spectacle which is afforded when a large party of hunters are engaged in this way on an extensive plain, and the skill and agility displayed by the young men on such occasions are highly spoken of by such as have witnessed them. The horses, it appears, seem to enjoy the sport as much as their riders, and are very active in eluding the shock of the animal, should it turn on its pursuer. It should be remembered on such occasions, that, when the Bison runs, it leans very much first to one side for a short time, and then to the other, and so on alternately.

The most generally practised plan of shooting the Bison is by crawling towards them from to leeward, and in favorable places great numbers are taken in pounds. To facilitate their approach to the Bisons, the Indians sometimes clothe themselves with the skin of the white wolf, which the Bison does not fear.



Indian singling out the fattest Bison.



A Bull Bison.



Hunting the Wild Buffalo.

Captain Harris, gives the following lively picture of Buffalo hunting in Africa: "It was a perfect panorama of game; I had with great difficulty restrained Piet from firing, and was almost within reach of the bucks, when a Hottentot suddenly discharging his gun put every thing to flight. The Buffaloes passed me quite close on their way to the hills. I fractured the hind leg of the largest, and mounting my horse, closed with him immediately, and after two gallant charges performed upon three legs, he fell never to rise again. This was a noble specimen of the African Buffalo, standing sixteen hands and a half at the shoulder. His ponderous horns measured four feet from tip to tip, and like a mass of rock, overshadowing his small sinister grey eyes, imparted to his countenance the most cunning, gloomy, and vindictive expression. The savages instantly set to work upon the carcass with their teeth and assagais—Piet providing himself with portions of the hide for shoe soles, and of the flesh, which, though coarse, is a tolerable imitation of beef. From the summit of a hill, I shortly afterwards perceived a large herd of Buffaloes. Creeping close upon them, I killed a bull with a single ball, but the confused echo, which reverberated among the mountains, alarming the survivors, they dashed from their concealment, ignorant whence the sound proceeded, and every thing yielding to their giant strength, I narrowly escaped being trampled under foot in their progress."



Domestic Ox.



Indians Hunting the Bison.

THE BISON.



A Bison.



Grand Indian Bison Hunt.



A Koodoo.



A Pallah.

The Pallah, a most magnificent specimen of the antelope family, is a native of South Africa. It associates in families of six or eight. Its swiftness is said to be astonishing. Their flesh though destitute of fat, is much esteemed by the natives of the country which they inhabit.

The Koodoo, also a magnificent animal, is about four feet in height at the shoulder. Like the Pallah, it is a native of South Africa. When hard pressed in the hunt, the males are quite formidable, from their immense strength and determination, and from their formidable horns, which are sometimes four feet in length.

The Nyl-Ghau is one of the largest Antelopes known. It is a native of the dense forests of India, where it resides alone or in pairs. It is extremely vicious, resolute and powerful, and will turn upon its pursuers with great fury. Even in confinement it is not to be approached without caution. Previous to making its attack, it drops upon its fore-knees, and in that attitude, gradually advances till within a certain distance of its foe, when it darts suddenly forward with amazing force and velocity. The general color of the male is slaty-blue; that of the female, tawny-red. A bunch of long hair hangs from the fore part of the neck, and a similar tuft terminates the tail.

Among the true Antelopes, the Springbuck, or Springbok, is one of the most graceful and beautiful. It is a native of Southern Africa. Its name is given in allusion to its singular habit, when pursued, or when hastening its pace, of bounding, with its back bent like a bow, to the height of seven or eight feet in the air. The general color of the Springbuck is light cinnamon-red, a band of deep reddish-brown passing along the sides, and edging the pure white of the under surface. When taken young, it is easily tamed.



A Koodoo.

(125)



A Springbuck.



A Nyl-Ghau.



The Prong-buck.

The Prong-buck, or Prong-horned Antelope, is found in the interior part of North America. It goes in flocks on the wide, open plains and hills of moderate height. It migrates from north to south, according to the season. It is well formed, compact and active, and capable of great speed.

The hunter sometimes ties a grey colored rag to a stick and places it in the ground, as represented in the engraving above. The animal's curiosity is thus excited. He stops and surveys it with great attention, and thus affords the hunter an opportunity to creep up and shoot him.

The Dorcas Gazelle is an Antelope found in Northern Africa, and lives in large herds on the borders of the cultivated country of the desert. When pursued they fly to some distance and then stop, turn round, gaze at the hunter, and again take to flight. If hard pressed they disperse in different directions, but soon reunite; and when surrounded and brought to bay, they defend themselves with spirit and obstinacy, uniting in a close circle, with the females and fawns in the centre, and presenting their horns at all points to their enemies.

The Hartebeest is a large and powerful kind of Antelope, found in South Africa. Its horns are annulated, and the tops bent back at a right angle with the lower part.



The Dorcas Gazelle.



The Hartebeest.



The Springbok.

THE ANTELOPE.



A Herd of Gnus.

The Gnu is one of the most singular members of the Antelope family. It appears as if it were a compound of the horse, stag and ox, for it partakes of the characters of all three. It is a native of the hilly districts of South Africa, where it roams mostly in large herds. The speed of the Gnu is very great; and, when hard pressed, they defend themselves with desperation. The general color of the animal is deep amber-brown, verging upon black. The tail is grey, and the mane nearly white. In length it is about five feet, and a little over four in height. The disposition is bold and fierce.



A Gnu.



A Gnu.

THE ANTELOPE.



Shooting Springbucks.

The Harnessed Antelope is so called from the markings on its back, which resemble a harness. It is found in South Africa. Our engraving represents the female.



A Gnu.



Hunting the Nyl-Ghau.



The Harnessed Antelope.

THE ANTELOPE.



Mr. Cumming pursuing a herd of Blesboks.

The Blesbok, or Pied Antelope, is found in South Africa. It is about three feet high, and long in proportion, with long, narrow head, and broad muzzle. Its horns are twelve to fifteen inches in length. It is gregarious. Mr. Cumming describes herds, utterly innumerable, passing by him over an extended plain for hours together, and covering the ground as far as the eye could reach. Our engraving above represents him pursuing a small herd of them.

The Oryx, also a South African animal, is well known among hunters as the only Antelope that revenges itself on the lion. When the lion springs on it, it lowers its sharp horns, receiving the lion on their points. It invariably perishes by the shock, but the lion also perishes with it. Their skeletons have been seen lying together bleached upon the plain.

"The Oryx, or Gemsbok," says Mr. Cumming, "to which I was now about to attract my attention more particularly, is about the most beautiful and remarkable of all the Antelope tribe. It is the animal which is supposed to have given rise to the fable of the unicorn, from its long straight horns, when seen in profile, so exactly covering one another as to give it the appearance of having but one. It possesses the erect mane, long sweeping black tail, and general appearance of the horse, with the head and hoofs of an Antelope. It is robust in its form, squarely and compactly built, and very noble in its bearing. Its height

is about that of an ass, and in color it slightly resembles that animal. The beautiful black bands which so eccentrically adorn its head, giving it the appearance of wearing a stall collar, together with the manner in which the rump and thighs are painted, impart to it a character peculiar to itself. The adult male measures three feet ten inches in height at the shoulder."



The Blesbok.



The Oryx, or Gemsbok.



Harris's Company driving in an Eland.

The best and fullest accounts of the Eland and the Oryx are to be found in Harris and Cumming's Adventures in South Africa. An extract from Cumming will be both interesting and accurate. Of the Eland he writes: "This magnificent animal is by far the largest of all the Antelope tribe, exceeding a large ox in size. It also attains an extraordinary condition, being often burthened with a very large amount of fat. Its flesh is most excellent, and is justly esteemed above all others. It has a peculiar sweetness, and is tender and fit for use the moment the animal is killed. Like the gemsbok, the Eland is independent of water. It is generally diffused throughout all the wooded districts of the interior where I have hunted. Like other varieties of deer and Antelope, the old males may often be found consorting together apart from the females, and a troop of these, when in full condition, may be likened to a herd of stall fed oxen."

Harris relates that he and his fellow hunters used to drive in the Eland towards their encampment before killing it; so as to save the trouble of carrying so large an animal.

The Kleenbok is a native of South Africa, and lives singly or in pairs. It is active, wary, shy and timid.



A Kleenbok.



An Eland.



The Sassaybe and Hartebeest.

The Sassaybe, called by the Cape Colonists the Bastard Wildebeest, is often noticed by both Cumming and Harris. The latter thus describes it: "Adult male four feet six inches high at the shoulder, four feet at the croup. Eight feet two inches in extreme length. Horns robust, about twelve inches long, placed on the summit of the frontals, turning outwards, and forming two crescents with the points inwards; neck short, body rather bulky, legs slender. General color deep blackish purple-brown above, fulvous beneath."

The Blauwbok is a native of South Africa. It occurs in the extensive open plains north of the Gariep, living in pairs or small families of five or six. It is a bold and fierce animal, and when wounded will turn upon the hunter with great resolution. At certain seasons it is reported to attack indiscriminately every animal that approaches near it. The Blauwbok stands three feet seven inches in height at the shoulder: the horns exceed two feet in length; they are round, uniformly curved backwards, and marked with from twenty to thirty prominent rings; the points, are smooth, and terminate very acute.



The Eland.



The Blauwbok.



A Cashmere Goat.

Of all animals which are domesticated, those belonging to the family of Goats are the most picturesque in their appearance, the most lively in their manners, and the most hardy in their constitutions. One kind or another of them is found in all parts of the world. In their wild, and even in their domesticated state, they are dwellers upon rocks and mountain-tops, and browse upon the edge of precipices, where few other animals could climb. The Common Goat, which is well known, is not in much request in this country; but, in some other countries, as in Syria, and Switzerland, herds of Goats are kept for the sake of their milk, and, in fact, almost entirely take the place of the cow. Their milk is reckoned superior in many respects to that of any other animal.



Domestic Goat.

The Cashmere Goat, the most celebrated variety of the domestic race, is spread through Thibet, and other neighboring countries. From its fleece, which is long, soft, silky, and generally of a snowy whiteness, the costly Cashmere shawls are made. The wool is first combed from the Goats in the mountains of Thibet, whence it is sent to Cashmere, and there bleached, spun, and woven into shawls.

In 1828, a Mr. Tower obtained from the Society of Arts in London their large medal, for having produced a Goat's-hair shawl equal to those of Cashmere, though both the growth and manufacture of England. This gentleman kept his Cashmere Goats on a farm in Essex, and from four first imported, his flock amounted, in a few years, to more than two dozen. Their most common food was furze.



Hunting the Chamois in Chamouni.

The hunting of the Chamois requires an extraordinary amount of patience and skill on the part of those who follow it. The hunter sets out upon his expedition of fatigue and danger generally in the night. His object is to find himself at the break of day in the most elevated pastures, where the Chamois feeds only at morning and evening. When he finds the Chamois, he endeavors to climb above him and to get nearer, by passing round some ravine, or gliding behind some eminence or rock. When he is near enough to distinguish the horns of the animal, he rests his rifle upon a rock, and takes his aim with great coolness. He rarely misses. If the Chamois falls, he runs to his prey, makes sure of him by cutting the hamstrings, and applies himself to consider by what way he may best regain his village. If the route is very difficult, he contents himself with skinning the Chamois; but if the way is at all practicable with a load, he throws the animal over his shoulder, and bears it home.

But when, as is more frequently the case, the vigilant animal perceives the hunter, he flies with the greatest swiftness into the glaciers, leaping with incredible speed over the frozen snows and pointed rocks. It is particularly difficult to approach the Chamois when there are many together. While the herd graze, one of them is planted as a sentinel on the point of some rock, which commands all the avenues of their pasturage; and when he perceives an object of alarm, he makes a sharp, hissing noise, at the sound of which all the rest run towards him, to judge for themselves of the nature of the danger. If they discover a beast of prey or a hunter, the most experienced puts himself at their head, and they bound along, one after the other, into the most inaccessible places.

It is then that the labors of the hunter commences; for then, carried away by the excitement, he knows no danger. He crosses the snows, without thinking of the precipice which they may cover; he plunges into the most dangerous passes of the mountains—he climbs up, he leaps from rock to rock without considering how he can return. These daring hunters often remain whole days among the glaciers.



A Chamois Hunter.



Hunting the Chamois.

The Chamois is found among the Alps, the Pyrenees, and the lofty mountains of Asia, bordering on the regions of everlasting ice and snow. Its height is about two feet three or four inches; the hair is short, and of an ash-color, varying to blackish brown. It is agreeable, lively, and active beyond expression; its senses are amazingly acute, and by the scent it will discover the hunter at the distance of a mile and a half. The spring of the Chamois is astonishing, and it will throw itself safely down an almost perpendicular height of twenty or thirty feet. It drinks little, and is rather fastidious in feeding, picking out buds and flowers and the tenderest herbs.

The Ibex, when chased, is a dangerous animal; as, after it has led its pursuer over dangerous heights and fearful chasms, it will frequently turn on him, and unless he can shoot it before it reaches him, will hurl him over the precipice. It is very wary, and like many other animals, posts a sentry to keep watch, when he sees a suspicious object, he gives notice by a kind of whistle, when the whole of the herd instantly dash off with the greatest speed to the highest point they can find.



Hunting the Ibex.



A Chamois.

THE GOAT.



The Ibex.



Common Goat.



The Ibex.



The Syrian Goat.



The Ibex.

The Ibex inhabits the Alps, the Appenines, and the mountains of Tyrol, in Europe; and is found in the Alpine chain of the Touran, in Asia. This bold and powerful animal, is readily known by its magnificent horns, which, in the male, are frequently three feet in length. They curve with a bold sweep from the head to beyond the middle of the back, and are partially surrounded, at regular intervals, with prominent rings. The Ibex is about two feet six inches in height. The hair, in summer, is short and close; in winter long and thick. Its general hue is yellowish gray, with a black streak running down the middle of the back.

The Ibex is vigilant and wary; and it is only during the night that it descends to pasture in the woods, but at sunrise again repairs to the bleak mountain summits.

The Syrian Goat is a native of the country from which it derives its name. It is remarkable for its large pendulous ears, which are commonly from one to two feet in length, and sometimes so troublesome to the animal that the owner is obliged to trim them, to enable it too feed with greater ease.

THE SHEEP.



Hunting the Musmon.

OF all our domestic animals, the Sheep is that of which we have the earliest notice; for, in Holy Writ we are told that Abel, the son of the first man, "was a keeper of sheep." Next to the cow, perhaps, it is the most useful to us. Its flesh is one of our most common and nutritious articles of food; and its wool furnishes us with warm winter clothing. Their fleece, however, accommodates itself wonderfully to climate; the thick wool which gives warmth to the Sheep of cold and temperate latitudes, being supplanted by a coat of hair less oppressive when they

are carried to hot countries. Its manners are gentle, and its disposition timid. In eastern countries, where they are regulated by the call, the Sheep knows and can discern the voice of its shepherd, and a stranger's voice they will not follow. On the Alps, and in some provinces of France, they are guided by the sound of the pipe; and when called at sunset to be penned for the evening, to preserve them from the wolf, they readily follow the Arcadian strain.

The Musmon, of Corsica, is now believed to be the original stock from whence most of the European breeds of Sheep have sprung. It still exists wild on the mountains of Corsica and Sardinia. They are about the ordinary size of Sheep, and breed with the domestic races. The horns of the male, (the female is without,) are large, long, and triangular, bending backward like a half circle. The body is large and muscular, the tail short, and bare on the inside; the legs are pretty long and the hoofs short. The color of the body is a yellow chesnut; the head ash-grey, whitish on the muzzle and about the eyes; the belly, inside of the thighs, and tip of the tail is white, the fleece owes its tints to the long hair, which exceeds the wool. They wander in flocks of about a hundred, led by some old and courageous male. Their habits are like those of our own sheep, docile and gentle, though sometimes a churlish old ram will butt down a child, a woman or a man, who may happen to stand in his road.

The Ovis Ammon, or Siberian Argali, is a native of Siberia, but is also met with in the wilds of Tartary. It is the parent stock of the Asiatic breeds of Sheep. It is a large animal; some stand three feet high at the shoulder, and weigh not less than two hundred pounds. Their horns are of immense size, weighing thirty pounds, and extending backward four feet.



The Musmon.



An Argali.

THE SHEEP.



Merino Sheep.

Prominent among the domestic varieties of the sheep is the Merino, a native of Spain. It is prized as having the finest wool of any specie bred in Europe. The Merino Sheep, in Spain, are always kept in the open air, being driven before summer to the cool mountains, and brought back again before winter to the warm plains. The distance traversed is upwards of four hundred miles, and the time necessary to complete the journey about seven weeks. The number of sheep in one flock is often as high as ten thousand; and the aggregate of all the flocks is often not less than six millions. The Merino is rather a handsome Sheep. The horns of the male are large and finely curving; the female is without these appendages. The color of the wool is pure white, but, from its closeness and oily nature, the dust adheres to it much more than to coarser wools, and thus the external color is commonly brownish.



Common Domestic Sheep.



An English Shepherd.



Wallachian Sheep.

Of the many varieties of domestic Sheep, the Wallachian is one of the most beautiful. It is said to be common in Wallachia, Hungary, Austria, and the western parts of Asia. It is an unruly and vicious animal, and possessing amazing strength. Its horns are very large and remarkably twisted; in the male they rise almost perpendicularly from the skull; but in the female, they spread out sideways, before turning upward. The wool of the Wallachian Sheep differs greatly from that of our common breeds, being long, straight, close set, and beautifully fine, and falling from the middle of the back on either side of the animal almost to the ground.

The Persian Sheep is a native of Persia, and other parts of the East. One of the most curious characteristics of this animal is the great deposit of fat on the tail and croup, which gives the animal a somewhat unsightly, and, certainly a very singular appearance. The tail itself is short, and seems buried as it were in the great mass of fat on each side. The general color of the body is a beautiful white, the head and neck black. Its fleece consists of short, coarse wool mixed with hair. The head is small and very delicately shaped.



Persian Sheep.



Wallachian Sheep.

THE SHEEP.



Wolves and Vultures devouring a Rocky Mountain Sheep.

a size, and curve so much forward and downward, as to prevent their feeding on level ground. The horns of the female are much shorter and slender. The color of the Rocky Mountain Sheep, in summer is generally greyish fawn, with a reddish or yellowish line down the back. In winter the upper parts incline to red.



Rocky Mountain Sheep.

The Many-horned Sheep is found in Siberia, and most countries of a similar northern latitude. They are rather a small race, but very hardy. The proper breed have their horns very irregular in number, amounting to three, four, or five, standing in different directions, but not forming screws, like the horns of many other Sheep. Their legs are slender, and their hoofs long and sharp, so as to be well adapted for a footing either on the rocks or on the ice.



Many-horned Sheep.



American Argal.

THE SHEEP.



Hunter and dead Mountain Sheep.



Hunting the Rocky Mountain Sheep.

It is extremely difficult to capture the Rocky Mountain Sheep alive; and it is utterly impossible to preserve them, when taken in any other region than that in which they are found. "Theirs," says Mr. Sage, in his *Scenes in the Rocky Mountains*, "is a life of unbroken spring—beauty and grandeur are their dwelling-place, and, amid the awe-inspiring sublimity of nature's works, is their home. They gambol upon the fearful verge of the steep cliff, or climb its perpendicular sides, bidding defiance to all pursuers. There, secure, from enemies, they rear their young, and teach them to leap from crag to crag in mirthful gaiety, or traverse the dizzy heights in quest of the varied sweets of changeeful spring.

"These animals are remarkably acute of sight, and quick of scent and hearing. The least noise or tainture of the air excites their attention and places them instantly upon the alert. Mounting upon some high rock, they will stand for hours in the same posture, gazing in the direction of the fancied danger. If fully satisfied of its reality, they abandon their position for another and a safer one, high among more rugged peaks, and often beyond the possibility of offensive approach. Their hue is so akin to that of the rocks which grace their range, they are with difficulty identified when standing motionless, and the hunter is constantly liable to mistake the one for the other."

"During our stay," continues Mr. Sage, "we succeeded in killing five Mountain Sheep. Some of these were very large and quite fat. The flesh of this animal is equal in flavor to that of buffalo. It is generally in good order, tender and sweet, and slightly assimilates our common mutton in taste."

Their ponderous horns are of great service to their owner in descending the abrupt precipices, which his habits so often render necessary. In leaping from an elevation he uniformly strikes upon the curve of his horns, and thus saves himself from the shock of a sudden and violent concussion. Instead of wool, they are covered with hair, which is shed annually. Their cry is much like that of domestic Sheep, and the same natural odor is common to both. Several naturalists have said that the Musmon of the south of Europe, the Argal of Asia, and the Wild Sheep of America, are only climatal varieties of one great species, which they have named the Mountain Sheep; but whether this is a fact we have no means of ascertaining.



Highland Shepherd, Dog, and Sheep.

The Common Domestic Sheep is so well known that no description of it is needed. Of the affection of the ewe for its young, a touching anecdote is related as having occurred in the Highlands of Scotland. In a severe snow storm, late in April, several score of lambs perished. Among these was the offspring of a ewe, who took her loss so much to heart that she placed herself beside the dead lamb. "I visited her," says the narrator "every morning and evening for the first eight days, and never found her above two or three yards from the lamb; and often, as I went my way round, she eyed me as I came near, and kept stamping with her foot and whistling through her nose to frighten away the dog. The weather grew warm, and the dead lamb, soon decayed; but still the affectionate mother kept hanging with fondness over the poor remains." For two weeks she never left the spot, and for seven days longer she visited it every morning and evening, uttering a few sorrowful plaints, till every particle of the remains of her offspring had been wasted away by the action of the elements.

THE SHEEP.



A Sheep-washing.

The breed of domestic Sheep has been greatly varied and improved by domestication. The varieties of domestic Sheep even in the United States and Great Britain are almost innumerable. The introduction of the Merino breed into this country, which took place more than forty years since, was of immense service to the wool growers. It was followed at a later period by the importation of a superior breed from Saxony, which was even preferred by many farmers to the Merino breed. The raising of Sheep has now become, in this country, a source of national wealth.



Common Sheep.



Common Sheep.



A Scotch Shepherd.

THE GIRAFFE.



Giraffes.

THIS singular animal, of which at one period the very existence was almost doubted, has become of late years quite familiar to us. By some naturalists it is thought to belong to the same family as the Camels; many class it among the Antelopes; while others consider it the representative of a family group intermediate between the Deer and the Antelopes, to which they have given the name of Camel leopards. It is found in no part of the world, except the continent of Africa.



Giraffes feeding.



Giraffe surprised by Hunters.

The head of the Giraffe is small. Its nostrils are surrounded by many strong hairs, and can be shut up so as to prevent the entrance of the sandy particles which the suffocating storms of the desert raise in fiery clouds. Its eyes are large; with mild expression, and are so placed, that the animal can see not only on all sides, but even behind, rendering it next to impossible for an enemy to approach undiscovered. The horns of the Giraffe are curious and singular, being unlike those of any other horned quadruped. They seem to form a part of the skull, and consist of two porous substances, about three inches long, and crowned with a tuft of stiff upright hair. The tongue of the Giraffe is an extraordinary instrument. It is slender and pointed, and can be stretched out to a surprising length, and in this state, is capable of being wound around twigs or branches, and of drawing them to the mouth. The natural food of the Giraffe is the leaves, blossoms, and tender shoots of the camel-thorn whose lofty and branchy top, the great length of the animal's neck enables it to reach easily.

The height of the male Giraffe to the top of the head is about sixteen feet; That of the female is a little less. The general color is fawn-white, marked regularly and rather closely with large angular spots of chocolate-color.

The long flexible neck of the Giraffe, is provided with a short mane. The tail is rather long, slender, and tufted at the end with long coarse black hairs. The fore-knees are remarkably large, and when about to lie down, the animal sinks upon them, and assumes an attitude that does not appear to be by any means easy or graceful.



Giraffe Hunting.

In its native wilds, the lion is the only enemy, man excepted, that the Giraffe need fear. From various sources, we learn that the lion often surprises the latter when he comes to drink at the pools or fountains, and springs from his ambush upon the tall and powerful beast, which, mad with terror and pain, rushes over the desert, bearing his destroyer, till, strength failing, he reels, sinks and expires. At other times, it is said, however, the Giraffe has successfully resisted the attack of the lion, and even killed him with blows from its powerful fore-feet.

The motions of the Giraffe are by no means graceful. In the simple walk its neck is stretched out in a line with the back, which gives the animal a most awkward appearance. In the canter, its hind-legs are lifted alternately with the fore, and are carried outside of and beyond them, by a swinging movement. When excited to a swifter pace, the hind legs are often kicked out, the nostrils opened widely, and the head swung backward and forward like an immense pendulum. Its appearance at such a moment is certainly odd, and has often attracted the attention of observers.

Yet, after all, the Giraffe is not an awkward animal; and it is very far from being slow. Indeed the swiftest coursers of the desert are scarcely equal to the chase, and among broken and rugged ground utterly unable to overtake it.

Authorities of deserved weight have erroneously stated, that the fore legs of the Giraffe are longer than the hind legs. An examination of the skeleton proves that, taking the limbs only from their setting on, the hind legs are about an inch the longest.



Pursuing the Giraffe.



Sir W. Cornwallis Harris's first view of a Giraffe.

Some of the most animating accounts of Giraffe hunts are contained in the work of Sir W. Cornwallis Harris. He says, "It was on the morning of our departure from the residence of his Amazoola majesty, that I first actually saw the Giraffe. At dawn of that day, a large party of hungry savages, with four of the Hottentots on horseback, having accompanied us across the Mariqua, we formed a long line, and, having drawn a great extent of country blank, divided into two parties. Beginning, at length, to despair of success, an object, which had repeatedly attracted my eye, but which I had as often persuaded myself was nothing more than the branchless stump of some withered tree, suddenly shifted its position, and the next moment I distinctly perceived that singular form of which the apparition had oft times visited my slumbers, but upon whose reality I now gazed for the first time. Gliding rapidly among the trees, above the topmost branches, of many of which its graceful head nodded like some lofty pine, all doubt was in another moment at an end—it was the stately the long-sought Giraffe. Putting spurs to my horse, I presently found myself half choked with excitement, rattling at the heels of an animal which, to me, had been a stranger even in its captive state, and which, thus to meet free on its native plains, has fallen to the lot of but few of the votaries of the chase. Sailing before me with incredible velocity, his long swan-like neck keeping time to the eccentric motion of his stilt-like legs—his ample black tail curled above his back—seemed to leave whole leagues behind him at each stride.



Giraffe

Despairing over such a rough country of improving my acquaintance with this ogre in seven league boots, I dismounted, and the mottled carcass presenting a fair and inviting mark, I had the satisfaction of hearing two balls tell roundly upon him. But he never slackened his pace, and pushed on so far ahead during the time that I was reloading, that, after remounting, I had some difficulty in keeping sight of him among the trees." Having at length got ahead of the flying Giraffe, Mr. Harris was mortified at finding his rifle so injured, that he was unable to fire upon the animal. Many days afterward, however, he had the satisfaction of bringing one of the stately creatures down, when, tossing his turbanless cap into the air, alone in the wild wood, he hurraed with bursting exultation, and unsaddling his steed, sank, exhausted, beside the noble prize.

THE GIRAFFE.



Hunting Giraffes with the Lasso.



An Oryx, or Gemsbok,



Africans hunting the Giraffe. (147)



A Giraffe feeding.

THE CAMEL.



Arabs with their Camels.

THE Camel tribe contains two groups, the Camels and Llamas; the former are restricted to the Old World, and the latter correspond to them in the New. In the true Camels the two toes are united below by a kind of horny sole, almost to their points, which terminate in small hoofs; and there is a soft cushion beneath the foot, by which it bears upon the sandy surface over which it is formed to move. Two species are known, one called the Bactrian or two-humped Camel, and the other the Arabian, or one-humped. Both are completely domesticated. The two-humped Camel is the larger and stronger.



Bactrian Camel.



Arabian Camel, or Dromedary

THE LLAMA.



Hunting the Llama.



White Llama.

THE animals which make up this division of the Camel family, are all natives of South America, and are found in no other part of the world. The chief species are the Llama proper, which is of various colors, from a dull white to almost black, the Guanaco, and the Alpaca. The hair of all these, but chiefly that of the Alpaca, is fine and soft, and highly prized. The Llama, proper, is a domesticated animal, and was once used a great deal by the Peruvians as a beast of burden.

The Alpaca dwells in herds among the mountains of Peru. Its general habits are the same as those of the Guanaco. The color of the upper part is various shades of maroon brown, in some places inclining to black, and the upper part and breast are white, as also are the insides of the thighs. It is an animal easily tamed, and quite harmless and docile; but when teased it assumes an attitude of defence, and blows and spits at its enemies.



An Alpaca.



A Llama.

THE LLAMA.



Guanaco and White Llama.



A Guanaco



Group of Llamas.



A Llama.

The Guanaco, or Wild Llama, inhabits the Cordilleras of the Andes, especially of Peru and Chili. When closely pressed in the chase, it will not only spit at the hunter, but strike violently with the fore legs, and even use its teeth. Its usual color is a deep, rich fawn, verging to white on the under parts.



The Vicugna.

The Vicugna is a variety of the Llamas of South America. The form of the Vicugna is elegant. The legs are slender, the neck erect, and head small; the ears long and flexible, and the eyes full and brilliant. When South America was first visited by the Spaniards, the Llama and several other animals were incorrectly described in general terms as belonging to the same species. Linnæus divided them into two species, at the head of which he placed the Llama, useful as a beast of burden, and the Vicugna equally valuable for its flesh and wool. Other naturalists have adopted different classifications of the groups resembling the Llama; but the late Baron Cuvier definitively placed the Llama and Vicugna in the rank of a distinct species, and regarded the others simply as varieties having affinities to them.

Captain Shelvocke, who visited Peru rather more than a century ago, gave the following description of the Vicugna: "The Vicugna is shaped much like the common Llama, but much smaller and lighter, their wool being extraordinarily fine and much valued. These animals are often hunted after the following manner:—Many Indians gather together and drive them into some narrow pass, across which they have previously extended cords about four feet from the ground, having bits of wool or cloth hanging to them at small distances. This so frightens them that they dare not pass, and they gather together in a string, when the Indians kill them with stones tied to the ends of leather thongs."

In Kerr's "Collection of Voyages," it is stated that in Chili and Peru about eighty thousand of these animals are killed every year for the sake of their wool, and that their numbers are still kept up. Dr. Ure states in his work on the "Cotton Manufacture," that among the mummy-cloths brought from the ancient tombs of Arica, in Peru, by Lord Colchester, there are specimens of a sort of worsted stuff, made of the wool of the Vicugna; so that at a period long preceding the commencement of manufactures, or the dawn of civilization in England, the art of manufacturing cloth had been acquired in those early ages by the inhabitants of this portion of the New World.



A Dead Stag.

DEER have been in all ages of the world among the most interesting of its wild animals. They are inhabitants of northern rather than of central regions, and are unknown, as natives, at the extreme south.

The most prominent of this genus, in the opinion of hunters, at least, is the Stag, or Red Deer. It is a native of Europe, where it has been prized for ages. It is also met with in Western Asia, and in some of the mountainous islands of the Mediterranean, and on the slopes of the mountains of Atlas in Northern Africa.

The Fallow Deer is a native of the southern parts of Europe. The male, which alone has horns, is commonly called a buck; the female, a doe; and the young, a fawn. The usual color is brown.



A Hind.



A Fallow Deer.



A Hart.



Musk Deer.

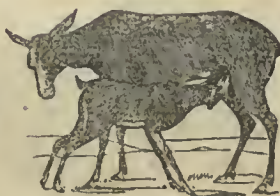
The musk deer is a native of the mountainous parts of northern India. From the male of this animal the perfume, known as "musk," is procured. The Axis Deer inhabits lower India. The Virginia Deer, is found in North America. It is a very graceful animal, and its eyes are peculiarly bright and soft.



Axis Deer—Male.



Axis Deer.



Doe and Fawn.



Virginia Deer.



Boucharville and the wounded Wapiti.

The Wapiti, or American Elk, commonly frequents the deep forests and rocky mountains of Canada; but it is also met with on the upper Missouri. It is one of the largest of the deer kind. The horns are of immense size, and grow with extraordinary rapidity; having been found to measure as much as five feet in length, and to grow, at certain periods, full an inch and a half a day.

The Wapiti when wounded, is a dangerous antagonist. The following story is from Palliser's "Adventures of a Hunter:—" "Having gained a favorable position about one hundred and fifty yards from the nearest of a flock of Wapiti, I chose, a fine old Stag, while Boucharville, with an eye to superior meat, singled out a doe. Both shots went off together, when the smoke cleared away, we espied a Wapiti lying down. The next instant down rolled the Stag also. On coming near my Stag, he struggled to rise, but unable to gain his feet rolled back again. I looked towards the other, when what was my surprise at witnessing a regular combat between Boucharville and his wounded Elk, now transformed into a very formidable antagonist. Springing on her haunches, she was striking furiously at him with her fore-feet; one hoof missed him, but the other fell on his rifle, which he held up for his protection, and smashing both his ramrod and his loading-stick, beat him down on his knees. Rising a second time, she was about to repeat the attack, when my bullet caught her in the side of the head behind the eye, and with a splendid bound she fell lifeless on the broad of her back.



A Wapiti.



A Fallow Deer.



A Wapiti, or American Elk.



Laplanders Travelling.

There is no animal so useful to man in any country, as the Rein-Deer is to the Laplander. It is especially in winter, when any other ruminant animal would perish with cold, and for the want of proper food, that the peculiar value of the Rein-Deer is felt by the Laplanders. Without him, communication would be almost utterly suspended. Harnessed to a sledge, the Rein-Deer will draw about three hundred pounds; but the Laplanders generally limit the burthen to two hundred and forty pounds. The trot of the Rein-Deer is about ten miles an hour; and the animal's power of endurance is such, that journeys of one hundred and fifty miles in nineteen hours are not uncommon. The food of the Rein-Deer is the lichen or moss, which they display wonderful quickness of smell in discovering beneath the snow. In the summer they pasture upon all green herbage, and browse upon the shrubs which they find in their march. They also, it is now well ascertained, eat with avidity the lemming or mountain rat, affording one of the few instances of a ruminating animal being in the slightest degree carnivorous.



A Fallow Deer.



A Rein-Deer.



A Rein-Deer



Milking the Rein-Deer.

It is a most pleasing spectacle to see a herd of Rein-Deer in the evening assemble to be milked. On all the hills around, every thing is in an instant full of life and motion. The busy dogs are every where barking, and bringing the mass nearer and nearer to the encampment, and the Rein-Deer bound and run,

stand still, and bound again, in an indescribable variety of movements. When all the herd, consisting of three or four hundred, at last reach the encampment, they stand still, or repose themselves, or frisk about in confidence. play with their antlers against each other, or browsing in groups surround a patch of moss. When the maidens run about with their milk vessels from Deer to Deer, the brother or servant throws a bark halter round the antlers of the animal which they point out to him, and draws it towards them; the animal generally struggles, and is unwilling to follow the halter and the maiden laughs at and enjoys the labor it occasions, and sometimes wantonly allows it to get loose that it may again be caught for her; while the father and mother are heard scolding them for their frolicsome behavior, which often has the effect of searing the whole flock.



A Musk Deer.



Black-tailed Deer.

The Black-tail Deer is found upon the shores and plains of the upper Missouri. Its habits are little different from most others of the Deer family, except that, that it does not run at full speed, but bounds along, raising every foot from the ground at the same time. Its ears are unusually long, and its eyes larger than those of the common Deer. The tail is tipped with jet black; from which fact the Deer derives its specific name. The hair of the animal's coat is long and very handsomely colored. In size it is rather larger than the Virginia Deer, and its hoofs are shorter and wider, and more like those of the Wapiti, or American Elk.



Rein-Deer.



Red Deer.



Stag going to Drink.

During certain seasons, Stags fight fiercely with one another. At these times it is hazardous to approach them; and persons have been known to lose their lives by so doing. When thus fighting, they bellow with frightful loudness. They lose their customary watchfulness, and their blundering often ends fatally to themselves. It is not unusual for them, while thus struggling for the mastery, to draw gradually to the edge of some cliff, over whose edge both the combatants, heedless of every thing but fighting, are precipitated. The experienced deer-stalker will tell you that such instances are neither improbable nor uncommon. Though not in season as food at that particular time, many of them fall a prey to the Highland poacher, and some of them are shot by their keepers.



Stags Fighting.



Elk Deer.



Hunting the Moose.



A Moose.

The Moose-Deer, frequently called in Europe the Elk, inhabits the northern part of Europe and America. On the western continent it is found from the Bay of Fundy to the eastern slope of the Rocky Mountains. At present it is not frequently heard of south of the St. Lawrence River. The male Moose often exceeds the largest horse in size; but the female is smaller. The hair of the male is long and soft, and black at the tip. The general hue of that of the female is a sandy-brown. From the length of its limbs, and the shortness of its neck and body, the Moose is not remarkably graceful in its motions; as, when at full speed, its gait is sprawling, and the animal is continually in danger of tripping itself, and even does trip itself at times in consequence of the hind feet treading on the fore-heels. But the loss of beauty caused by this length of limb is amply made up, by the animal's being enabled to crop with ease the buds and young twigs of the birch, maple or poplar, which form its principal food.

During summer, the Moose frequents swampy or low grounds, near the margins of lakes and rivers, through which they delight to swim, as it frees them for the time from the numerous insects by which they are pestered. In the winter, in families of fifteen or twenty, they seek the depths of the forests for shelter and food.



Bears attacking a Moose.



A Moose.



Indians hunting the Moose.



Stag Hunting in the Highlands of Scotland.

As the Moose Deer possesses a fine sense of hearing and is watchful to an extraordinary degree, the art of catching it is looked upon as a wonderful accomplishment by the Indians, who, in the winter chase the animal upon their snow-shoes. Tracking it through the snow, they get within gun-shot only by the exercise of the greatest caution and perseverance. Nor is the chase always unattended by peril. If the animal be an old male, and the shot does not bring him down, he turns furiously on the hunter, who has to take shelter behind a tree. Instances are mentioned, in which, at such a time, the enraged Moose has completely

stripped the bark from the trunk of a large tree, by striking it with his fore-feet at the person of his foe. On firm snow, the Moose can sustain a long pursuit. Captain Franklin tells of three Indians who chased a Moose for nine days before they could overtake and kill him.



Deer Hunt.



Highland Deer



Hunters and Deer.

The Roebuck is the most light and handsome of all British Deer; and in some respects it approaches the antelopes, the ancients giving it and some of the species of that genus indiscriminately the name *Dorcas*, that is "bright eye." The Roebuck is pretty generally distributed, being found in all the temperate parts of Europe and Asia, and even it is said in India, though there it has been confounded with some of the Indian species which resemble it a good deal in the forms of their horns. There are colored varieties, one very red, and another yellowish brown, and a third nearly black; they all have the characteristic white disk, at least in the winter, and the tail is never more than an inch in length.



Springbok.



Musk Deer.



Roebuck.

THE DEER.



The Chevrotain.

The family or group to which the Musk Deer belongs are called *Moschidae*, or the musk tribe. Setting aside the Musk Deer, the other members of this group are called Chevrotains. The largest of the Chevrotains, called the Meminna, is only eighteen inches in length, and of proportionate stature. Its color is olive grey, the sides being dappled with white, which is the color of the throat and under parts. The Chevrotains are the lightest, smallest, and most delicately beautiful of all the ruminating animals. They are found only in the East Indies.



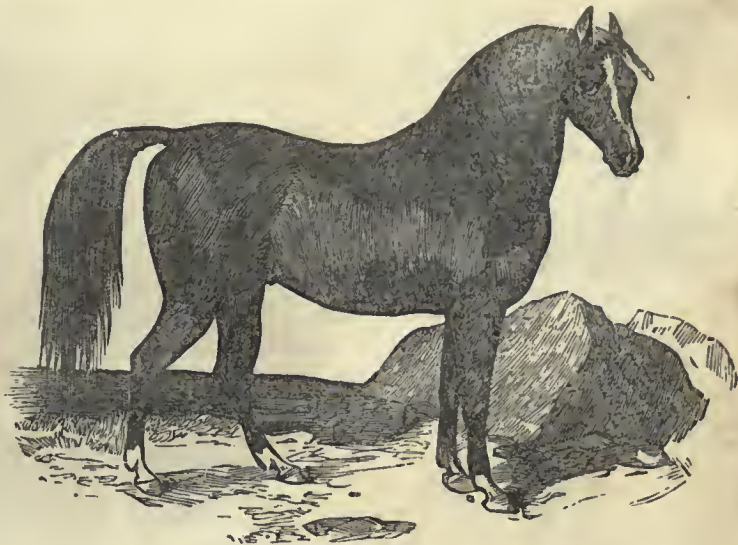
Deer at Bay.



Herd of Deer Drinking (169)



Anglo-Arab.



Bay Arabian.

ORIGINALLY, the Horse, it would seem, was a native of the eastern hemisphere only; though multitudes of the race are now found running wild in various parts of North and South America; as they are, also, in some countries of Asia and Africa. Their existence in America is accounted for by the fact that they were conveyed there by the Spanish conquerors, and being turned loose, speedily grew wild. The wild Horses of the Pampas, in South America, are undoubtedly descendants of these Andalusian chargers. The Indians of the Pampas catch and tame them; and the same people whose forefathers fled in horror and dismay from the fatal apparition of the Spanish Horses, are now literally "incorpsed and demi-natured with the brave beast." The Gauchos, who themselves ride so beautifully, declare that it is impossible to vie with a mounted Indian; for that the Indians' Horses are better than their own, and also that they have such a way of urging them on, that even were they to change horses, the Indians would beat them.

But of all the countries in which the Horse is found in a wild state, Arabia produces the most desirable breed. The animals that are met with in these deserts are of superior symmetry and swiftness. The Arabians are solicitous in catching the Wild Horse, which by their kindness and attention they are not long in domesticating.



Indians of the Pampas on Horseback.



Arabian Horse.

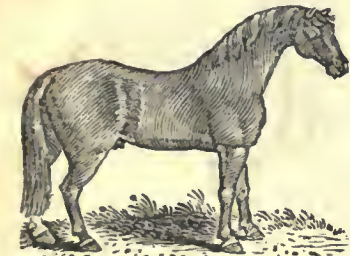
THE HORSE.



A War Horse.



Calmuck Marriage Ceremony.



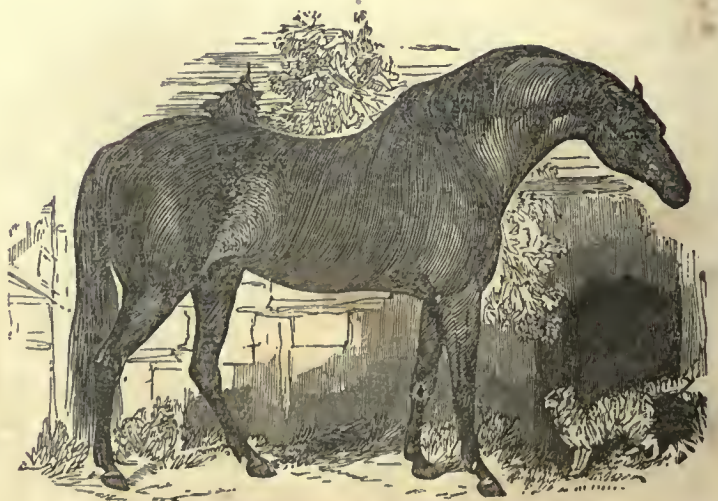
A Cart Horse.

The Arabian Horse is of slender make, and beautifully limbed, and seldom exceeds fourteen hands in height. The fondness for their horses which the Arabs manifest partakes of the extravagance of Oriental feelings. They rear them up in their tents among their children and family, and they caress them and apply to them the most endearing epithets.

Next to the Arabs there are few people fonder of horses than the Calmuck Tartars, who possess a very fine breed. Among these people the ceremony of marriage is performed on horseback. A girl is first mounted and rides off at full speed. Her lover pursues, and if he overtakes her she becomes his wife, and returns with him to his tent. But it sometimes happens that the woman does not wish to marry the person by whom she is pursued, in which case she will not suffer him to overtake her. If she dislikes him, she rides, in English sporting phrase, neck or nothing, until she has completely escaped, or until the pursuer's horse is tired out, leaving her at liberty to return, to be afterwards chased by some more favored admirer.



English Hunter.



Godolphin Arabian.



A Stampede.

in the sultry plains, and then the horses, tortured to madness, rush into the first marsh or pool they can find, trampling each other to death. The impetuous rush of a herd of Wild Horses impelled either by some panic or by raging thirst, is called a stampede. During these stampedes, the herd of maddened animals not unfrequently breaks into the camps of hunting parties on the plains or prairies. In such an event, the tame horses of the hunters are almost always borne away by the excited throng.

The Shetland Pony, as its name implies, is a native of the Shetland Isles. The Sheltic, as it is called, is very small, its height sometimes being only thirty-four inches; but it is very strong and sure-footed, carrying its rider with perfect safety along the most terrific precipices, and almost invariably choosing to walk on the very edge.

It is generally allowed that the hunter, whose spirit is only equalled by his endurance of fatigue, and whose speed is on a par with his beautiful form, presents a happy combination of those qualities which give swiftness to the racer, vigour to the charger, and muscular power to the draught-horse.



Shetland Pony.



Spanish Mules.



A Roman Horse Race.

In all countries, and in all ages of the world, men have found pleasure in racing horses. During the carnival season at Rome, a singular mode of horse racing is practised. At one end of the great street, called the Corso, a rope is stretched across the way, behind which a number of horses are ranged, riderless, decorated with gay feathers, and having attached to their girths little balls of lead, from which issue sharp steel points. At the sound of a trumpet, the rope drops, and the horses dash forward down the street. The harder they run, the more the steel points in the leaden balls prick them and spur them on. Added to this, the street is closed up behind them by a yelling multitude of people; so that, notwithstanding the absence of riders, they are urged on to the utmost stretch of their speed. In a balcony at the other end of the Corso, stands the Governor of Rome, to judge of the race. To the owner of the winning horse an ornamental flag is given as a prize.



A Wild Ass.

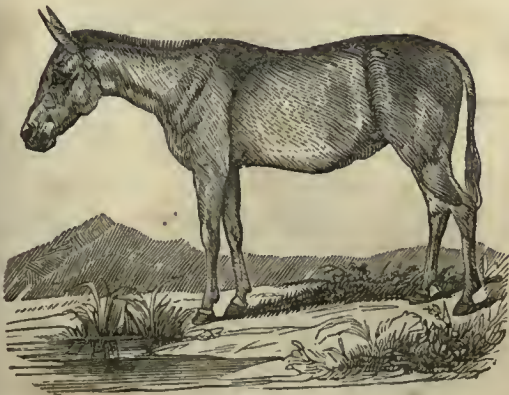


Eclipse.

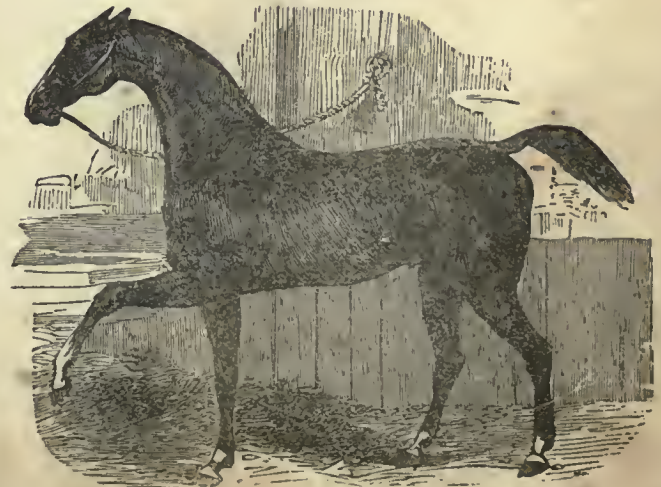
In England, there have been some instances of wonderful swiftness in the race horse. As among the most prominent of English racers, we may mention the celebrated Eclipse, who was never beaten, and the scarcely less famous horses, Flying Childers and Godolphin Arabian.

The humble and hardy Ass is scarcely less serviceable to man than the more imposing horse. In this country, where it meets with harsh treatment, is scantily fed, and only used for laborious tasks, it is dull and obstinate; but in the East, where it is employed by the rich nobles and is properly treated, it is an elegant and spirited animal, with good action and smooth coat. White Asses are always used in the East for the especial service of bearing persons of distinction, a custom of great antiquity. In Persia, and other countries, there are herds of Wild Asses. They are so fleet that no horses can come up to them, and even with rifles the chase is very uncertain. The Persians esteem its flesh very highly, considering it one of their greatest delicacies.

There is a mixed breed between the Horse and the Ass, called the Mule, an animal in no very great request in this country, but extensively used in the East for riding, and in Spain it is the established beast of burden. It is very sure footed, and is on that account employed in the Andes instead of the Llama



A Mule.



Flying Childers.

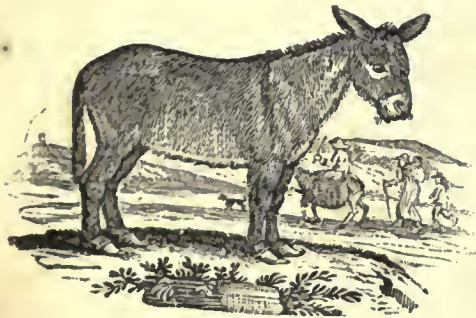


A Quagga.



A Zebra.

The Quagga bears a greater resemblance to the horse than to the zebra; the hair on the neck is brown, with transverse stripes, the croup of a reddish grey, tail and legs whitish; its voice resembles the barking of a dog. It is a native of the same country as the zebra, but is not so fierce: like it, however, its flesh is much relished both by man and the king of the forest, whose combined depredations are thinning its ranks.



Domestic Ass.

The Zebra is a native of the mountain districts of southern Africa. In its shape it has no little resemblance to the mule. It is regularly striped, even down to the hoofs, with glossy brownish black on a yellowish white ground. Wild and swift, this beautiful species live in troops in the bold ranges of craggy mountains remote from the abodes of man. Its disposition is savage and intractable, and it is by no means easily obtained, not only from its fleetness, but from the nature of the locality it frequents, where, like the Wild Ass of Tartary, in "the wilderness and barren land is his dwelling; and he scorneth the multitude of the city."



A Zebra.



A Runaway Horse.

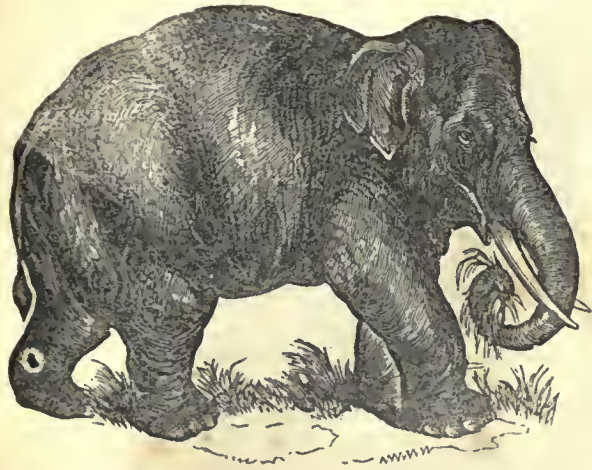


Burchell's Zebra.

Burchell's Zebra is a tenant of the plains of Southern Africa. It is strong and muscular, and admits of being tamed to a certain extent with facility. Naturalists have noticed the remarkable fact that this species, as well as the Quagga, is often seen in peaceful company with the ostrich. It may be distinguished from the Zebra of the mountains, by the shortness of its ears, and also by the absence of stripes on the limbs and under surface of the body. When flying in troops before the hunter, these animals are said to present a beautiful appearance. The engraving above represents the spearing of one of Burchell's Zebras by a mounted Caffre.



Zebra and Gnu.



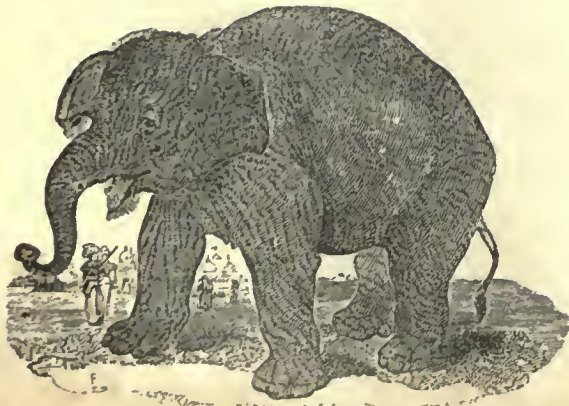
Asiatic, or Indian Elephant.



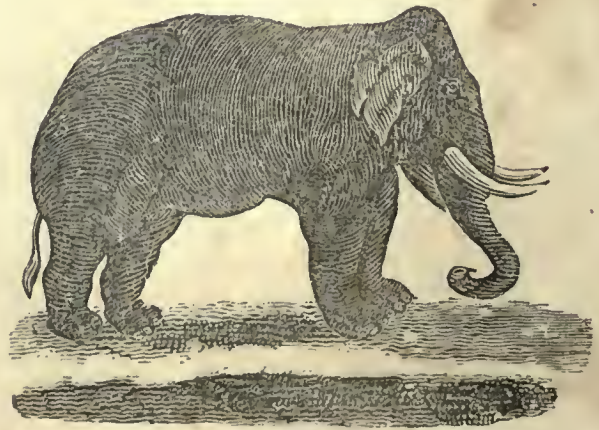
African Elephant.

Of the Elephant, whose form is familiar to every eye, two species are known, the Indian and the African. The anatomy of this huge quadruped is well worthy of consideration. Its head and tusks are so very heavy that no long neck would bear them; the neck is therefore very short. This apparent defect is compensated by the wonderful manner in which its upper lip and nose are elongated and rendered capable of drawing up water or plucking grass. In the proboscis, or trunk, there are about forty thousand muscles, enabling the Elephant to shorten, lengthen, coil up, or move in any direction this most extraordinary organ. The trunk is pierced throughout its length by two canals, through which liquids can be drawn by suction. If the Elephant wishes to drink, after drawing the liquid into its trunk it inserts the ends of the proboscis into its mouth, and discharges the contents down its throat; but if it merely wishes to wash itself or play, it blows the contained liquid from the trunk with great violence. Through the trunk the curious trumpet-like voice of the Elephant is produced. At the extremity is a finger-like appendage, with which it can pick up small objects. The tusks and teeth of the Elephant furnish exceedingly fine ivory, which is used for various purposes, such as knife handles, combs, billiard balls, &c.

The Asiatic or Indian Elephant is a native of Bengal and other East Indian districts. The African Elephant is distinguished from the Asiatic by the markings of its teeth, the great size of its ears, and some difference in form. It is widely diffused through the vast forests of Africa, and is met with in herds of various numbers. The male is very much larger than the female. He is provided with two enormous tusks. These are long, tapering, and beautifully arched; their length averages from six to eight feet, and they weigh from sixty to a hundred pounds each.



Indian Elephant.



Asiatic Elephant.



Furious charge of a wounded Elephant.

Hunting the Elephant, though perilous and exciting, is yet not so dangerous a sport as one might think it to be. When the huge beast has been wounded, however, its fury is sometimes terrific. In its headlong charge upon its assailant, it appears regardless of every obstacle, shattering trees of large size, and sending the broken branches high in the air. It was in this way that Mr. Cumming was charged by a huge Elephant in Southern Africa, and obliged to fly for his life. The adventurous hunter returned to the attack, however, and, after discharging over forty barrels into the animal's body, at length succeeded in bringing him to the ground.



Shooting the Elephant.



Shooting the Elephant.

Mr. Cumming, in his Adventures in South Africa, relates that, having wounded an Elephant, he dismounted from his horse, to get closer to the animal. When, having fired, he endeavored to regain his saddle, the refractory horse refused to allow him to mount, and commenced backing toward the wounded Elephant. At this moment a second Elephant charged upon him at full speed. "I felt certain," says he, "that she would have either me or my horse. I determined not to relinquish my steed, but to hold on by the bridle. For a few seconds my position was certainly not an enviable one. Fortunately, however, the dogs took off the attention of the Elephants; and just as they were upon me, I managed to spring into the saddle, where I was safe."



Perilous Encounter of Mr. Cumming with two Elephants.



Hamstringing an Elephant.

In Mr. Cumming's Adventures there are many interesting accounts of Elephant hunts. The most exciting and perilous chase, in which he engaged, was after a large bull Elephant, whom he had ridden out of a herd. Several times the animal charged upon him with terrible fury; and, on one occasion, he gave himself up for lost, so close was the huge animal upon him. But the good fortune, or skill, of the hunter carried him through all perils, and, after a long contest, he had the satisfaction of bringing the Elephant to the ground.

Among the various modes of capturing the Elephant, that of hamstringing is one of the most dangerous. It is frequently practised however, in Africa, and the East Indies. The hunter having ready a sharp cutting instrument, creeps cautiously up to the Elephant, and by a dexterous stroke, severs the tendons of one of the animal's hinder legs. Thus disabled, the poor brute is easily slain.



Riding out the best Bull Elephant.



Hunting the Elephant.

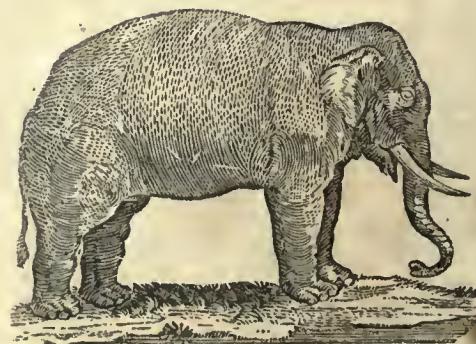


Wild Elephant left after having been Bound.

The Indian Elephant is almost invariably taken from its native haunts and then trained. The Indian hunters proceed into the woods with two trained female Elephants. These advance quietly, and by their blandishments so occupy the attention of any unfortunate male that they meet, that the hunters are enabled to tie his legs together and fasten him to a tree. His treacherous companions now leave him to struggle in impotent rage, until he is so subdued by hunger and fatigue that the hunters can drive him home between their two tame Elephants. When once captured he is easily trained. Bribes of sugar and arrack, a kind of spirit, are the usual means of inducing an Elephant to attempt some new art or to labour with particular assiduity. In its wild state it endeavors to gratify its taste for sweets at the expense of the sugar planters.



The Natives rejoicing over a slain Elephant.



Elephant.



A Hunter assailed by Peccaries.

The Peccary is a small, but very fierce animal of the hog kind, found in Mexico, Texas, and South America. There are two varieties, the Collared Peccary and the White-lipped Peccary. The White-lipped Peccary is larger than the other species, weighing one hundred pounds, and being three and a half feet in length. It assembles in large flocks, and attacks the hunter with great intrepidity.

M. Sonnini relates that he was often, in the course of his travels in Guiana, surrounded by a troop of Peccaries, infuriated with the havoc made by the muskets of himself and his companion. Mounted upon a tree he was enabled to observe their motions, and to notice the manner in which they encouraged by their grunts and by the rubbing of their snouts together those among them who were injured by the shots which were poured upon them from above. With erected bristles and eyes sparkling with rage, they still maintained their ground under an incessant firing of two or three hours, when they quitted the field.



White-lipped Peccary.



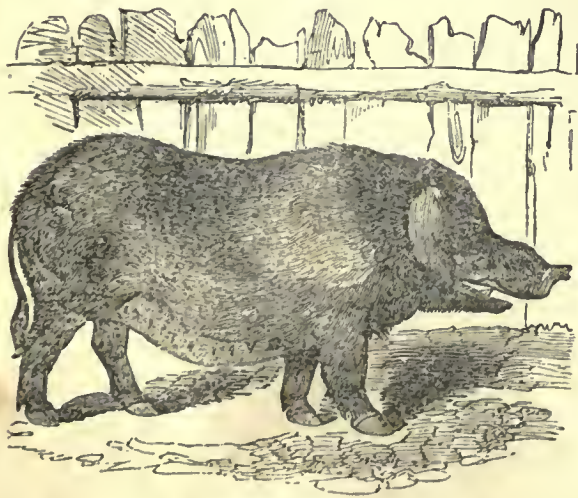
Collared Peccary.



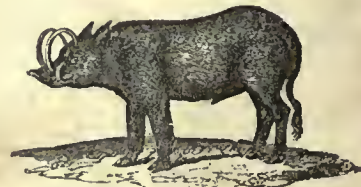
Wild Boar.

The animals composing the Hog tribe are found in almost every part of the globe. Their feet are cloven and externally resemble those of the ruminants, but an examination of the bones at once points out the difference. The Wild Hog or Boar inhabits many parts of Europe, especially the forests of Germany,

where the chase of the Wild Boar is a common amusement. Its tusks are terrible weapons, and capable of being used with fatal effect. They curve outwards from the lower jaw, and are sometimes eight and ten inches in length. In India, where the Boar attains to a great size, the horses on which the hunters are mounted often refuse to go within striking distance of the boar.



Domestic Hog.



Babyroussa.



Wild Boar.



Wild Boar Hunt.

The Domestic Hog scarcely needs any description. It is by no means the unclean and filthy animal that moralists love to represent it. It certainly is fond of wallowing in the mire, but no animal seems to enjoy clean straw more than the Hog.

The Babyrousa inhabits the Molucca Islands, and Java. It is remarkable for possessing four tusks.



Wild Boar.



The Babyrousa.



Calling in the Hunters after the Death of the Boar.



Chase of the Wild Boar.

Boar hunting is a sport by no means unattended with danger to the hunter himself, as well as to his dogs. As practised during the middle ages, the animal, when brought to a stand, was attacked sometimes on horseback and sometimes on foot; and either by swords which were struck into his flesh, or by strong spears which were protruded against him till he either rushed upon the point, or exposed himself to a thrust from the person by whom the weapon was held. The parts into which it was attempted to plunge the spear, with the view of inflicting the most deadly wounds, were the forehead, between the eyes, and the breast, immediately under the shoulder-blade. The above engraving presents a spirited sketch of this mode of attack. It sometimes happened, however, that the Boar would, by a sudden movement, contrive to seize the haft of the protruded spear between his powerful jaws, in which case his assailant was exposed to the most imminent danger of destruction. One crunch was sufficient to grind the wood to fragments; and the next instant, unless some one was by to renew the attack, the enraged beast had his unarmed enemy upon the ground under his hoofs, and was ripping him up with his tusks. When horses were employed, they were frequently wounded in this way. Boar hunting is still a favorite amusement in India; but there the sport appears to be always followed on horseback, and the animal is attacked by long spears or javelins, which are not usually thrust into his flesh, the hunter retaining a hold of the weapon, but are lanced at him from a distance of twenty or thirty yards as he flies before his mounted pursuers.



A Domestic Hog.



Domestic Hog



Peccary.



Indian Rhinoceros.

THE genus *Rhinoceros* contains six well established species, which are confined to the hotter regions of the Old World, and are divided between Africa and India, including the islands of Sumatra and Java. Their general characteristics vary but little. All are remarkable for their massive forms, thick, knotty, and almost hairless skins, and for the fact that their eyes are placed nearer the nose than in any other quadrupeds.

The Indian Rhinoceros in his native regions leads a tranquil, indolent life, delighting to roll and wallow in the marshy borders of lakes and rivers. Though sluggish in its habitual movements, this animal, when roused is a formidable antagonist. During certain seasons it is dangerous to approach the Rhinoceros, and he furiously assails every animal that attracts his notice or ventures near his haunts, even the Elephant himself. The Indian Rhinoceros has but a single horn, and can easily be distinguished from the other species of the genus by the deep folds into which the coarse skin is gathered.



Rhinoceros attacking an Elephant.



Indian Rhinoceros.

The Javanese Rhinoceros is found nowhere but in the island of Java. Its general appearance is like that of the Indian species. It is, however, a smaller animal, and the folds of the skin are less numerous and less deep.

The White Rhinoceros is a native of Africa, and is the largest of the African species, being upwards of twelve feet in length, and six in height. Its general color is pale broccoli-brown. Its disposition is gentler than that of any other member of the Rhinoceros family. Like all the African species, it is furnished with two horns.



Javanese Rhinoceros.



White Rhinoceros.



Hunting the Black Rhinoceros

The Black Rhinoceros is extensively spread throughout the southern region of Africa. It differs from the Indian, not only in the possession of a double horn, but in the absence of massive folds of skin. The fore-horn is long, hard, and finely polished at the point; the hinder one short and conical. The general color of the animal is yellowish brown, with tints of purple on the sides of the head. His upper lip is long and capable of being lengthened out and used something like the Elephant's trunk. When pursued, and in fear, he possesses an astonishing degree of swiftness, considering his size, the apparent unwieldiness of his body, his great weight before, and the shortness of his legs. It is true that a horse can seldom come up

with him, but this is owing to his cunning, and not his swiftness. He makes constantly from wood to wood, and forces himself into the thickest part of them. The trees that are frush, or dry, are broke down, like as with a cannon shot. Others that are more pliable, greener, or fuller of sap, are bent back by his weight and the velocity of his motions. And, after he has passed, restoring themselves to their natural position, they sweep the incautious pursuer and his horse, from the ground, and dash them to pieces against the surrounding trees.



Indian Rhinoceros.



Black Rhinoceros.

THE RHINOCEROS.



Rhinoceros Keitboa.

The Rhinoceros Keitboa greatly resembles the Black Rhinoceros in its habits and general appearance. The two horns, however, are of equal, or nearly equal length. When wounded, it will turn upon its pursuer. On one occasion Mr. Cumming, the hunter, came near losing his life by the assault of an enraged Rhinoceros.



Mr. Cumming chased by a Black Rhinoceros.

THE HIPPOPOTAMUS.



Hippopotamus and Crocodile combat and Hunt. From a print after Rubens.

THE Hippopotamus is a native of Africa, and is thought to be Behemoth of Scripture. It is nearly the same size as the Rhinoceros, has an enormously large head, and its mouth is armed with strong tusks. Though its habits are generally quiet and inoffensive, its rage and strength, when it is roused, render it very dangerous; it feeds on grass, chiefly during the night; retiring at day-break to the water, where it remains until the dusk again invites it forth to graze.

The large engraving on this page is intended to represent a scene on the banks of the Nile. A Hippopotamus and Crocodile engaged in combat, are surprised by the hunters, who, notwithstanding the peril of the adventure, seem to charge with great spirit.



Hippopotamus Feeding.



Hippopotamus surprised while Feeding.



Mr. Cumming and the Hippopotamus.

The following account of a Hippopotamus hunt is condensed from Mr. Cumming's "Adventures:"

Just as the sun was going down, I came upon the fresh lairs of four Hippopotami. They had been lying sleeping on the margin of the river, and, on hearing me come crackling through the reeds, had plunged into the deep water. Next moment I heard them blowing a little way down the river. I then headed them, and with considerable difficulty at length came right down above where they were standing. There were three cows and an old bull; they stood in the middle of the river, and, though alarmed, did not appear

aware of the extent of the impending danger. I took the sea-cow next me, and with my first ball I gave her a mortal wound, knocking loose a great plate on the top of her skull. She at once commenced plunging round and round, and then occasionally remained still, sitting for a few minutes on the same spot. I feared that she would get into deep water, and accordingly fired a second shot, which, entering the roof of her skull, passed out through her eye; she then kept continually splashing round and round in a circle in the middle of the river. Divesting myself of my leathers, and armed with a sharp knife, I dashed into the water, which at first took me up to my arm-pits, but in the middle was shallower. On reaching her, I seized her short tail, and attempted to incline her course to land. After some hard work, I succeeded in bringing the animal to the bank. I then took my rifle and sent a ball through the centre of her head.



Hunting the Hippopotamus.



Malay Tapir.

THE Tapir forms a family of mammalia, belonging to the same order as the elephant, and is considered as one of the links connecting that animal with the hog. The American Tapir is spread throughout the warmer regions of South America. It sleeps during the day, and wanders about at night in search of its food, which consists of water-melons, gourds, and other vegetables. It is very fond of the water, and can remain below the surface for a considerable period. It is a very powerful animal, and as it is furnished with a very thick hide, it plunges through the brushwood, breaking its way through any obstacles that may oppose its progress. Its disposition is gentle, but when annoyed it sometimes rushes at its antagonist and defends itself vigorously with its powerful teeth. The jaguar frequently springs on it, but is often dislodged by the activity of the Tapir, who rushes through the bushes immediately that it feels the claws of its enemy, and endeavors to brush him off against the thick branches. The height of the American Tapir is from five to six feet.



American Tapir.
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The Malay Tapir is somewhat larger, and is known by the greyish white color of the loins and hind quarters, which give the animal an appearance as if a white horsecloth had been spread over it. In disposition it resembles its American relative. It is easily tamed, and becomes as completely domesticated and as much at home as any dog. It then feeds on all kinds of vegetables, and is very fond of attending at table to receive bread, cakes, and the like.

Though the flesh of the Malay Tapir, like that of the American, is dry and disagreeable, and therefore of little value as an article of food, it is yet thought that the animal might be domesticated with advantage, and employed as a beast of burden. Its docility and great strength are strong recommendations. Its skin would prove, from its toughness, useful for various purposes.



Daman, or Hyrax.

WHEN we look at the rabbit-like Hyrax, it does not surprise us to find that all the older naturalists regarded it as a *rodent* animal, and placed it among the gnawing animals. Cuvier, however, at length pointed out the true situation to be in the same order which comprehends the hippopotamus, the elephant, the horse, and the hog. Notwithstanding the smallness of its size, it is to be regarded as intermediate between the rhinoceros and tapir. Several species belong to the genus; of which we have one represented in the engraving. It is called the Cape Hyrax, or Daman, and is common in the rocky and mountainous districts of South Africa. It is found inhabiting the hollows and crevices of rocks, both on the summits and sides of hills. It abounds on the sides of Table Mountain, where it may be seen skipping near its burrow's mouth, or cropping the herbage; on the least alarm, however, it instantly retreats to its strong hold, whence it cannot be dislodged without the greatest difficulty. Quick, watchful, and active as the Hyrax is, it is frequently captured by the ferocious animals which lurk around its abode, and the larger birds of prey, which pounce upon it before it is aware of their approach.

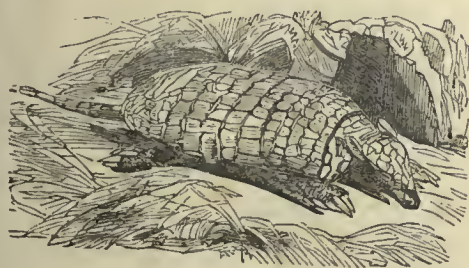
In the general contour of its body the Hyrax is stout and thickly set. The limbs are short, the toes on each foot are four before and three behind, all being tipped with little slender hoofs, except the inner toe on each hind foot, which is armed with a long, crooked nail. The head is large and thick, the eyes of a moderate size, the ears short and rounded; the teeth consist of molars and incisors, the former bearing a close resemblance in miniature to those of the rhinoceros. The general color of the fur, which is soft and thick, is a dark greyish brown, becoming paler beneath. Its actions, and indeed its general aspect, much resembles those of the rabbit, with which animal it agrees in size.

The Daman appears to live in families. In winter it is fond of coming out of its hole, and sunning itself on the lee side of a rock, and in summer of enjoying the breeze on the top. In both instances, as well as when it feeds, a sentinel is on the lookout, and gives notice, by a shrill, prolonged cry, of the approach of danger.



Pichiciagos.

THE Armadillos are burrowing animals, and are covered with a dense armor, composed of hard scales arranged in a tessellated manner, or fitted together like stones in a pavement. Between the different bands of these, there are narrow rings of membrane, which allow the body to bend. They have claws adapted for digging, and a tongue but little extensible. The great Armadillo inhabits Brazil and the northern parts of Paraguay. It is never found except in the depths of dense forests.



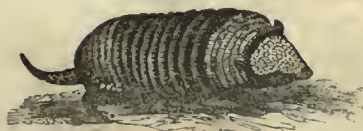
Six-banded Armadillo.

The Weasel-headed, or Six-banded Armadillo is very common in Paraguay. Its strength and activity are very remarkable, and few men can overtake it.

In South America, there is also found another singular animal, which presents a remarkable mixture of the characters of different tribes. It is called the Pichiciago, and has a firm tessellated shield, like the Armadillo. This, however, only protects the upper surface of the body. In its conformation it resembles the beaver, mole, and ant-eater, besides the Armadillo, to which it is nearest related.



Great Ant-eater.
(187)



Weasel-headed Armadillo.



Great Armadillo.



Long-tailed Manis and Short-tailed Manis.

THE Ant-eaters, are natives, of the warmer regions of America. Their head is long and slender, terminating in a small mouth without teeth, from which the tongue is protruded nearly two feet, for the purpose of collecting its food, which consists of ants and small insects. When he demolishes the dwellings of the ants, the Ant-eater thrusts this extraordinary member, covered with saliva, amid the insects, to which they adhering, he swallows them by thousands. The Great ant-eater is nearly four feet long, and stands about a foot high. He fights standing, like the bear, using his fore paws, and will, it is said, sometimes overcome the jaguar.



Great Ant-eaters breaking into the dwelling of the White Ant.

The Manis which is the Ant-eater of Africa and India, has a natural coat of mail still more invulnerable than the Armadillo, all the upper parts of the body being covered with triangular scales of different sizes, hard as a flint, and sharp at the point. There are several species of the Manis, two of which are the long-tailed and short-tailed.



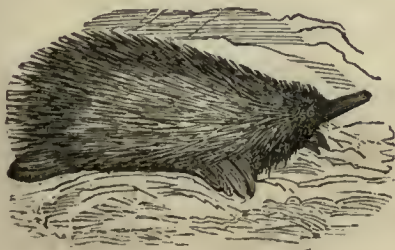
Great Ant-eater.
(188)



Male Ornithorhynchus.

When the Ornithorhynchus, or Duck-billed Platypus, was first introduced into Europe it was fully believed to be the manufacture of some impostor, who with much ingenuity had fixed the beak of a duck into the head of some unknown animal. It feeds upon water-insects and shell-fish, always rejecting the crushed shells after swallowing the inhabitant. The male Ornithorhynchus, has a spur on its hind feet, and both fore and hind feet are webbed. This extraordinary animal is a native of Australia.

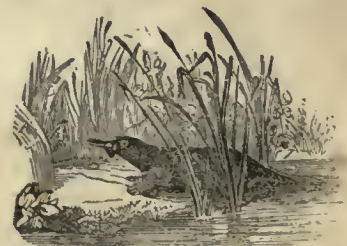
In the same order with the Ornithorhynchus is found the Echidna, or Spiny Ant-eater, which is also a native of Australia.



Echidna.



Ornithorhynchus



Female Ornithorhynchus.



Harpooning the Whale in the Arctic Seas.

The Cetacea, or Whale tribe, in many respects resemble fishes, and have often been classed with them by naturalists. They are, however, distinguished from fishes by possessing warm blood, and by being obliged to rise to the surface for air, instead of extracting sufficient from the water by their gills.

The Greenland Whale, or Balena, is found in the arctic seas, a dweller amid eternal cold and ice. Numerous vessels are dispatched yearly for its capture, on account of the oil and whalebone furnished by it. The oil is extracted from a thick, fatty layer, immediately beneath the skin, called blubber; the so-named whalebone is obtained from the inside of the mouth, where it fringes the jaws, and serves as a sieve for the animal to strain his food through. The throat of this Whale is small, and its food is a little creature, about one inch and a half long, called *elio borealis*. When wishing to feed, he rushes through the water, with his vast jaws fully expanded, inclosing a multitude of little sea-animals, together with large quantities of water. When, having shut his mouth, he expels the water through the bony fringes, leaving the animals within. Like other cetacea, this animal produces its young alive, and suckles them.



Great Greenland Whale.

The Cachalot, or Spermaceti Whale, differs in several points from the Greenland Whale. His under jaw is armed with a terrific row of teeth, with which he often bites the boats of the whaler. In a museum, at Oxford, is one of these jaws, sixteen feet and a half long, and containing forty-eight enormous teeth. His head is of immense size, and from this spermaceti is obtained. After his capture, a



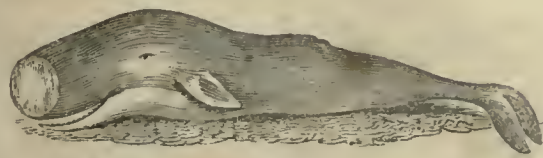
Dangers of the Whale Fishery.

large hole is made in the top of his head, and the spermaceti is baled out in buckets, to the amount of several hogsheads. The layer of blubber on this animal is thin, but yields a fine and valuable oil. Ambergris, once used as a medicine, but now only as a perfume, is a diseased secretion from the intestines of this animal. The Cachalot is about seventy feet long, and inhabits the arctic sea, though sometimes it is found on the coasts of Europe.

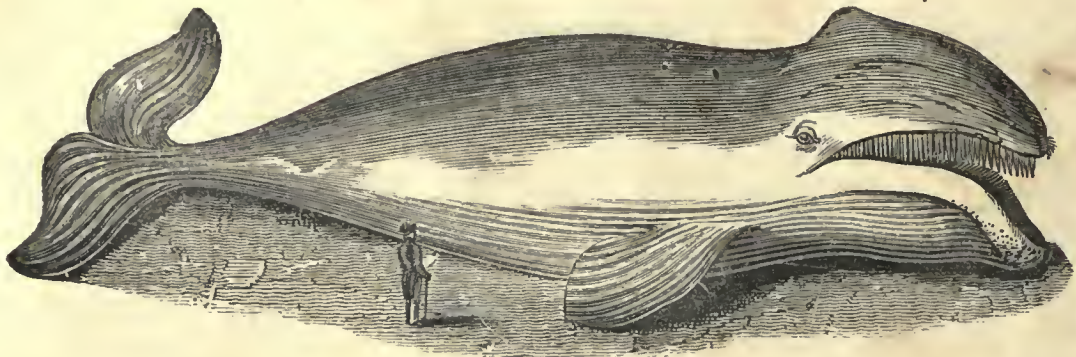
The pursuit of the Whale was practised by the Norwegians in the ninth century, though of the manner we know nothing. The first who undertook it for commercial ends, appear to have been the borderers of the Bay of Biscay, who found the animal in their neighborhood. The creature they chased, however, was probably different from, and smaller than the arctic species, and seems to have been captured chiefly for its flesh, then an article of food. Finally, the Whales ceased to visit their bay, and they gradually sought them farther and farther off, till they reached the Newfoundland, Iceland, and Greenland coasts. Thus, in the sixteenth century, commenced the northern Whale fishery, and it has ever since been pursued.

The first English Whaling voyage was in 1594, and the Dutch commenced the business at about the same date. The Hamburgers, French, and Danes soon followed. At present, from various causes, the English, Americans, Hamburgers, and Prussians send forth nearly all the whalers.

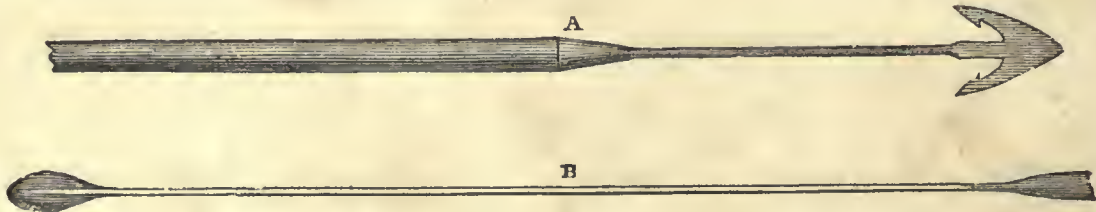
The Whale ships, which are generally from three to four hundred tons burden, commence fishing in May, or in very good seasons, in April, and the close of the season takes place between early August and late September, according to the nature of the season. As recently as 1820, most Whale ships plied at the east of Greenland, but now those waters are nearly exhausted of their fish. At present, therefore, most ships steer directly for Baffin's Bay, west



Cachalot, or Spermaceti Whale.



Carcass of the Whale.



A. The Harpoon.

B. The Lance.

of Greenland, where Whales are yet abundant, but where the prevalence of icebergs make the fishery even more perilous than before.

As the Whale was first pursued for its flesh, so the elastic substance called whalebone, lining its jaws, was next the commercial object chiefly contemplated. This article was, at one time, in such demand, that England paid the Dutch one hundred thousand pounds a year for it. Now, the Whale is valued mainly for its blubber, the substance furnishing train oil. This blubber, which is the animal's fat, lies immediately beneath the skin, encompassing the whole body, fins and tail. Its thickness varies from eight to ten and from ten to twenty inches, according to the locality. The lips of the Whale are nearly pure blubber, and yield from one to two tons of clarified oil each. When fresh, the blubber does not smell unpleasant, but ere long becomes tainted and offensive.

A Greenland ship, besides a master and surgeon, carries a crew of forty or fifty men, including several classes of officers, such as harpooners, boat-steerers, line-managers, carpenters, coopers, &c. She has, generally, six or seven boats, which being the principal means of prosecuting the fishery, are so hung round her, that they can be detached almost instantly.

After the Whale is killed and cut up, the blubber and bone are stowed in the ship; but all previous operations are performed in the boats. The chief instruments, with which every boat is provided, are two harpoons, and six or eight lances. The harpoon is wholly of iron, and about three feet long, consisting of a shank with a barbed head, each barb having an inner and smaller barb reversed. To the shank is attached a line about two inches and a quarter in circumference, and one hundred and twenty fathoms long. Each boat has six of these lines, making jointly seven hundred and twenty fathoms, or four thousand three hundred and twenty feet. The harpoon is commonly thrown by the hand, though sometimes projected from a sort of gun, and its use is simply to strike and hook the fish, which is then killed with the lance. The lance is a spear, six feet long, consisting of a handle of fir, fitted with a steel head, very thin and exceedingly sharp. It is not flung, like the harpoon, but held fast and thrust into the animal's body. When a Whale is lying on the surface of the water, unconscious of the approach of its foes, the fishers row close upon it, and the harpoon is buried in its back. The wounded creature, in its agony, makes a convulsive effort to escape. This is a moment of peril. The boat is exposed to be violently struck by its head and fins, and, especially by its enormous tail, which sometimes sweeps the air with such fury, that boat and men are both liable to a common destruction.

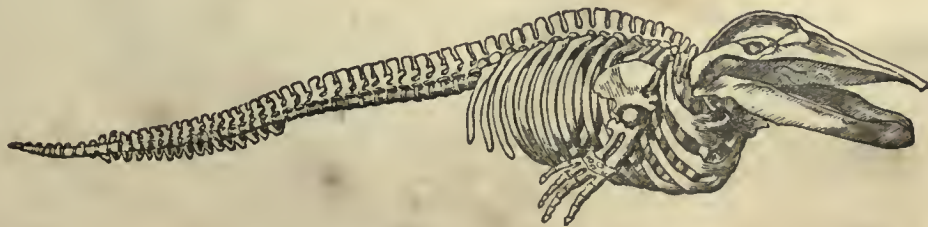


Lancing the Whale.

On being struck, the Whale instantly dives downward, with the velocity, it appears from the drawing out of the line, of ten miles an hour. The moment the animal disappears, or leaves the boat, a flag is elevated on a staff, at sight of which, those watching on the ship's deck give the alarm. The crew rush on deck, perhaps from their berths, and hurry into the boats.

The rapidity with which the line is drawn out by the Whale, occasions so much friction on the boat's edge, as often to shroud the harpooner in smoke, and, but for pouring on water, the boat would take fire. Sometimes the line gets foul, and the boat is drawn under water, and then the crew must swim for their lives. The fish generally remains about half an hour under water, and then often rises at some distance from where it descended. The assisting boats hurry to it, and ply their harpoons and lances. At length, exhausted by wounds and loss of blood, it indicates the approach of death by spouting blood from its blow-holes, and sometimes by a convulsive struggle. Finally it turns on its back or side, and ceases to breathe.

The next operation is called "flensing," which is the clearing of the carcass of its bone and blubber. The dead animal is fastened alongside the ship, and men go down upon it with their feet armed with spurs to prevent slipping, and with knives and other instruments cut off the blubber in slips, which, being by others cut smaller, are then stowed in the hold. This is all that is now done to the Whale in its native regions. The concluding process, which is the conversion of the blubber into oil for use, is essentially the same as that by which the fat of the hog is made lard, and the fat of the ox tallow. That is, it is boiled and purified. The long, technical description, given by writers on this topic, we need not here transcribe.



Skeleton of the Whale.

CETACEA.

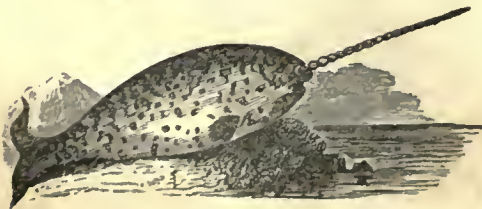


Spearing the Narwhal.

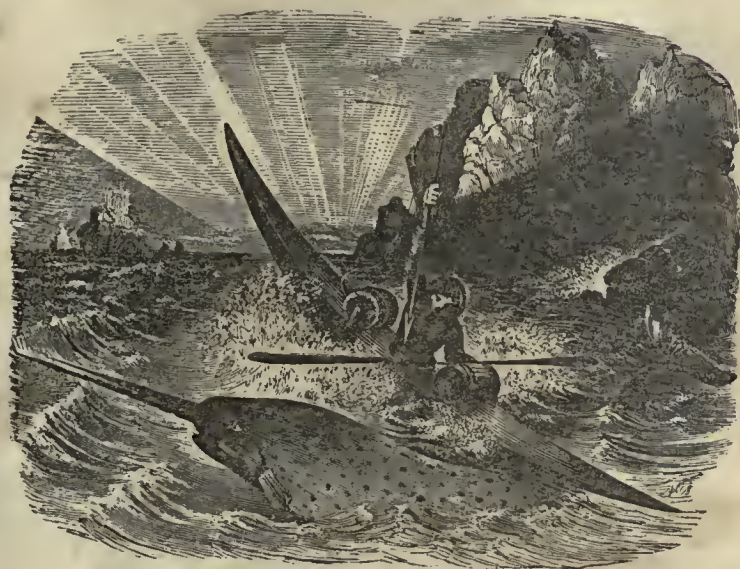
The Narwhal is from thirty to forty feet long, and has an ivory tusk projecting from the left side of his head, from five to nine feet in length. It is said to possess two of these projections, the right one remaining within the head. The use of this tusk is unknown, some supposing that it is employed to dig up sea-weeds for the animal's food, and others that it is used to transfix his living prey. This tusk used to be sold, as the horn of the unicorn, till better knowledge prevailed. The Greenlander finds, in the Narwhal, oil, food, weapons and ropes.

To the rapidity, the great powers, and the ferocity of the Narwhal when attacked, many writers have borne testimony. Its form is admirably adapted for cleaving the waters, and we can well believe that the

shock of its weapon, driven full tilt against an enemy, must produce a terrible effect. The ribs of the stoutest boat would be transfixd by the dint of such a blow, far more easily than was ever shield by the lance of knight in battle or tournament. Several instances have indeed been known in which the animal has plunged his weapon deep into the thick oak timbers of a ship, when it has fortunately snapped short, the fragment remaining fixed in the orifice, so as to plug it up. A portion of wood taken from the hull of a ship with a piece of



Narwhal.



Greenlander attacking a Narwhal.



Whale, diving.

Narwhal's tusk firmly imbedded in it, came some few years ago under our own inspection. It is probably only in defence of the females and their young, unless indeed when attacked himself, that the male Narwhal thus rushes against ships or boats; for we utterly discredit the usual accounts of its causeless and indiscriminate attacks upon any object which approaches within its range. Doubtless when wounded and harassed it becomes desperate; and its power, its velocity, and weapon combine to render it formidable.

The Narwhal is gregarious, associating in troops of from six or eight to twenty or more; and numbers are often seen clustered together, both in the open sea and in bays and inlets free from the ice, forming a compact phalanx, moving gently and slowly along. Under such circumstances the independent movements of each individual are necessarily embarrassed, so that a considerable slaughter may be easily effected among them.

When attacked at such a time, the hind ranks, instead of turning against their assailants, press upon those before, sliding their long weapons over the glossy backs of their leaders, and all becomes disorder and confusion. Opportunities of this kind are welcome to the Greenlanders, to whom the Narwhal is an important animal.

When struck by a harpoon, the Narwhal dives with great velocity, and in the same manner as the Whale, but not to the same extent. In general it descends about two hundred fathoms, and on returning to the surface, is dispatched by a whale-lance, without any difficulty. The blubber is about three inches in thickness, and invests the whole body; it affords about half a ton of oil.

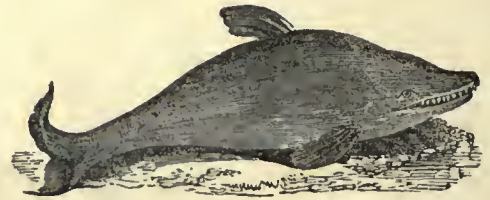
The female Narwhal produces a single young one at a birth.



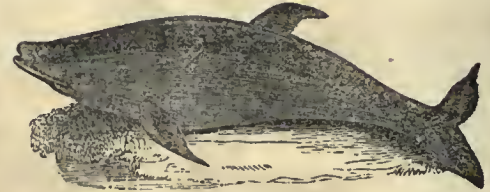
Whale, pursued by Sword Fishes.



Attacking the Whale.



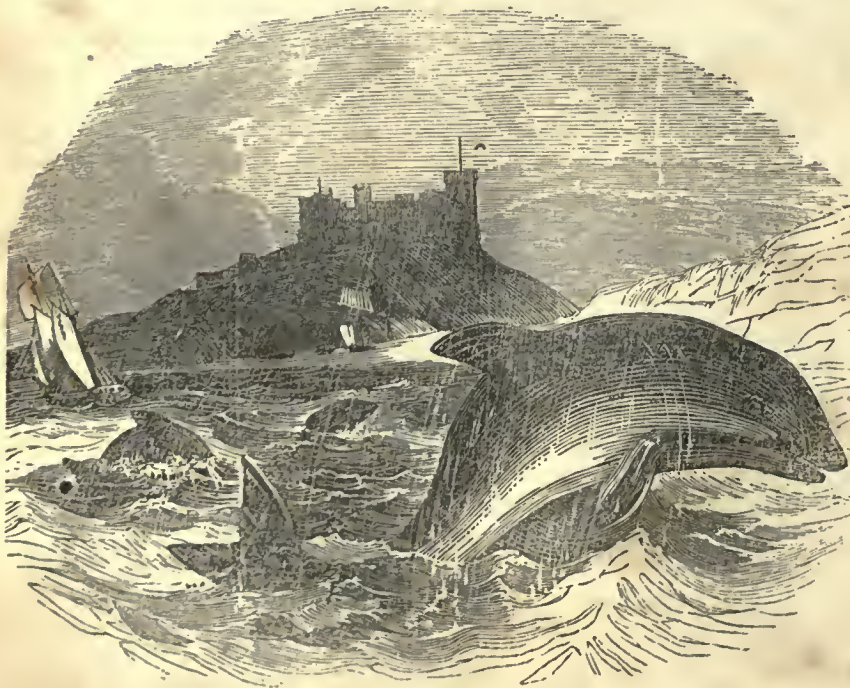
Dolphin.



Grampus.

The Dolphin has been the theme of many beautiful fables, both in ancient and more recent times, all of which, unfortunately, are fables merely. He exhibits no sunset, changing tints in dying, but the sole change is, that when drawn from the water, his black becomes brown, and his white grey. Like the Whale, the Dolphin nurses its young, and must come to the surface for air. Its snout is very long, and seems to be used for capturing such aquatics as burrow in the mud. The animal's length is from six to ten feet.

The Porpoises are found tumbling and rolling in both European and American seas. In old times their flesh was deemed a standard delicacy of the table, but is so no longer, having a strong, oily flavor, like that of most cetacea. The voracity of this creature is enormous. It feeds on various fishes, but its feasting times are when the shoals of herrings, and other migratories, come from the north. Its length is about five feet.



Porpoises.

The Grampus is from twenty to twenty-five feet long, and of such a fierce and predacious nature, that it not only destroys the Porpoise and Dolphin, but it is reported that it will even attack Whales. The nose is flat and reverted at the extremity; and it has thirty teeth in each jaw, those in front being blunt, round, and slender; the hinder sharp and thick. The Grampus is found in the Mediterranean and Atlantic seas, as well as in both the Polar regions; and it occasionally appears on the British coasts.



Lammergeyer, or Bearded Vulture.

THE birds of the Vulture family are, on the whole, perhaps, the largest of the predacious birds; but they are not the most courageous. They are most abundant in hot climates, where they perform important services in clearing away putrid animal matter, upon which they chiefly feed.

The Lammergeyer, or Bearded Vulture, is very common in the Alps of Switzerland and Germany, where, from its depredations on the kids and lambs, it has earned its name of Lammergeyer, or Lambs' Eagle. Its habitation is the loftiest mountains, and there are tales of its having descended upon the unfortunate chamois hunter with such irresistible force, as to dash him from the glacier precipice into the gulf below. The belief is current in the Alpine regions, that it has carried off children to feed its young; nor does this seem to be entirely groundless. The color of the upper part is of a greyish-brown, the under parts white, with an orange shade. Its head is feathered, and it has a beard of strong hair, whence it derives its name.



Condors.

With many naturalists, we have placed the Condor among the Vultures; though it differs from them in having a fleshy tuft growing on its beak, somewhat resembling the wattles of a turkey, as does also the King Vulture. The Condor inhabits the Andes of South America, always choosing its residence on the summit of some solitary rock. It does not build any nest, but lays its two white eggs on the bare rock. It is a very large bird, exceedingly strong, and very tenacious of life. Two Condors will attack and kill the Llama, or even the Puma; for by their repeated buffeting and pecking they weary it so completely that it yields to their perseverance.



Condor.



Condor.



Egyptian Vultures.

Of the Vultures of the Old World, the Egyptian Vulture is the smallest. It is, however, one of the most common, being found in Egypt and in parts of Europe and Asia. In Egypt its utility in clearing the streets of filth has been frequently noted. In ancient times the Egyptians worshipped it, from which fact it has been called Pharaoh's Chicken. Its length is about two feet five inches; its general color is white. The young of the year are of a deep brown, slightly spotted with lighter brown and white, and do not attain their adult plumage for two or three years.



Condor.



Turkey Vulture.



Turkey Vulture, or Turkey Buzzard.

The King Vulture is a native of South America, seldom if ever being seen north of Florida. Travellers relate that this species keeps the other Vultures under subjection, and does not suffer them to approach a dead animal until he has completely satisfied his own appetite, which is certainly none of the smallest.

The Turkey Vulture, or Turkey Buzzard, as it is sometimes called, inhabits a vast range of territory in the warmer parts of the American continent, but in the northern and middle states of the Union it is partially migratory, the greater part retiring to the south on the approach of cold weather. In Mr. Darwin's Journal we read that "the Turkey Buzzard is a solitary bird, or at most, goes in pairs. It may at once be recognized from a long distance by its lofty soaring, and most elegant flight. It is well known to be a true carrion-feeder." This bird is abundantly found in Jamaica, where it goes by the name of the John Crow Vulture. It is there protected by law, every person who kills one within a certain distance of the large towns being fined twenty-five dollars. Much contention has arisen between certain naturalists with respect to the olfactory powers possessed by this bird. Mr. Gosse, in his volume, says, "Those who ascribe the power which the Vulture possesses of discerning from a distance its carrion food, to the sense of seeing or the sense of smelling, *exclusively*, appear to me to be both in error. It is the two senses, exerted sometimes singly, but generally unitedly, which give the facility which it possesses of tracing its appropriate food from far distances." The Turkey Vulture is two feet and a half in length, and with wings extended upwards of six feet in breadth. The bill from the corner of the mouth is almost two inches and a half long, of a dark horn color for upward of an inch from the tip of the nostril.



Secretary Bird, devouring a Snake.



King Vulture.



Griffon Vulture, carrying off a Snake.



Harpy Eagle.



An Owl.



Sparrow-Hawk.



Sociable Vulture.

The Griffon Vulture, which is one of the largest birds of prey of the Old Continent, measuring from three feet and a half to four feet in length, and more than twice as much in the expanse of its wings, is found on the lofty mountain chains of Europe, Asia, and Africa. The nest of the Griffon Vulture is formed in the clefts of rocks. It lays from two to four eggs.

The Sociable Vulture is a bird of extreme rarity. In size it is fully equal to the Condor, the larger specimens measuring upwards of ten feet in the expanse of their wings. The head and greater part of the neck are of the color of raw flesh, and exhibit only a few scarcely perceptible scattered hairs. The throat is covered with blackish hairs, and the lower part of the neck behind with a kind of ruff of crisped and curling feathers. It is a native of Southern Africa.



Eagle and Tortoise.

Sociable Vulture.



Group of Birds.

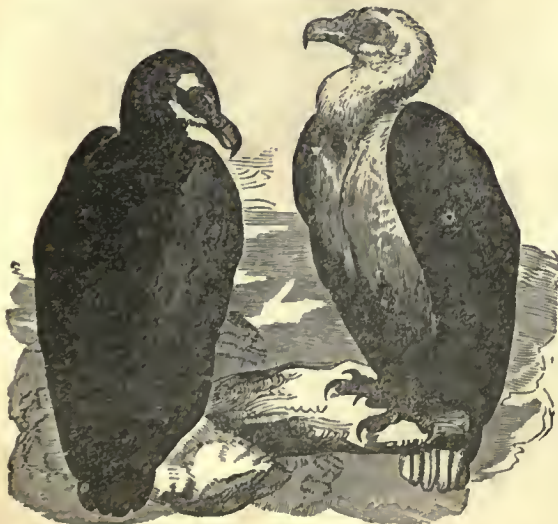


Condor.



Secretary Birds.

THE Secretary Bird, or Serpent-eater, as it is more descriptively called, though having long legs like a wading bird, seems to rank between the Vulture and the Eagle, and, therefore, is frequently called the Secretary Vulture. It feeds exclusively upon reptiles, and especially serpents, offering no molestation to quadrupeds, poultry or other warm-blooded animals; and it pursues its prey on foot, striding over the ground like an Ostrich. It chiefly inhabits the arid plains in the neighborhood of the Cape of Good Hope. In its wild state the Serpent-eater is shy and difficult of approach; but it is easily tamed, and is often kept in poultry-yards by the inhabitants of the Cape of Good Hope, for the purpose of destroying lizards, snakes, rats, &c. It soon becomes habituated to the poultry; but if left too long fasting, it does not scruple to satisfy its hunger with the young chickens. The name Secretary was given to it by the Dutch settlers at the Cape, from a pendent crest on the back of the head, reminding them of the pen stuck behind the ear, according to the custom of writing clerks.



Vulturine Caracara Eagles.

Like the Secretary Bird, the Vulturine Caracara Eagle presents one of those intermediate forms, by means of which the relationship of the Vulture and Eagle families is placed beyond a doubt. It is a native of South America, but is rarely met with.



Harpy Eagle.

THE Harpy Eagle constitutes the type of a distinct section among the birds of prey, a section first established by Cuvier, and adopted by most naturalists. The species comprehended in this genus, *Harpva*, are exclusively American; they are characterised by the enormous thickness and strength of the tarsi, which are feathered half-way down; the wings are short and rounded, the beak is strongly hooked, as are the talons also, and of formidable magnitude. The Harpy Eagle is a native of Guyana and other parts of South America, where it frequents the deep recesses of the forests remote from the abodes of men. Of its habits, however, in a state of nature, we have but little information.



Nest of the Golden Eagle.



Golden Eagle.

The Golden Eagle measures three or four feet: The general color of its plumage is a deep brown, dashed with tawny about the head and neck, and variegated, in different parts, with darker shades, The cere is of a fine golden hue, and the bill is of a dark brown color; the legs are feathered, the toes yellow, and the claws black. The Golden Eagle builds in mountainous places, and occasionally breeds in the northern parts of this country; its nest is composed of large sticks, rushes, heath, &c.. The hen often lays three eggs, but it rarely occurs that more than two are prolific.



Golden Eagle.



Group of Birds.



Imperial Eagle.



Washington Eagle.

The Imperial Eagle is closely allied to the Golden Eagle, but has longer wings and large white scapulary feathers. It is extremely powerful, fierce and destructive. The Imperial Eagle inhabits the mountain districts of the South of Europe and the adjacent countries of Asia.

The Washington Eagle is a species discovered by Audubon. It is the largest Eagle known. It is very rare, and has been observed only in the United States. Bold and vigorous, it disdains the piratical habits of the Bald Eagle, and invariably obtains its own sustenance without molesting the Osprey.



White-headed Eagle, robbing an Osprey.
(205)



Vulture and Dove.
18



White-headed Eagle.



Great Sea Eagles.



White-headed Eagle.

The Great Sea Eagle is an inhabitant of nearly the whole of Europe and of Northern Asia. It sometimes builds its nests in the clefts of rocks, but more frequently on the summit of some lofty tree. The female lays two eggs, about the same size and shape as those of a goose. The young are fed with fish or flesh until they are able to quit the nest, when they sally forth with their parents in quest of their own prey, and speedily assume an independent mode of life.



An Owl.



Eagle.



Harpy Eagle.

The White-headed; or Bald Eagle is usually spoken of as inhabiting the northern parts both of the Old and New Continent; but it appears to be only a rare and occasional visitant of the former. Throughout nearly the whole of North America, on the contrary, it is met with in great abundance, as well on the sea coast, as on the banks of the broad lakes and rapid rivers, from which the chief part of its sustenance is derived. The great Cataract of Niagara is mentioned as one of its favorite places of resort, not merely as a fishing station where it is enabled to satiate its hunger upon its most congenial food, but also in consequence of the vast quantity of four-footed beasts, which unwarily venturing into the stream above, are borne away by the torrent and precipitated down those tremendous falls. His most common method of obtaining food, consists in snatching from the Fish-Hawk the hard-earned morsel for which the latter has watched and toiled in vain. Sometimes, however, the Fish-Hawks assemble in bands too numerous for him to encounter, and he is driven to hunt for himself. He then usually retires inland, and occasionally destroys great numbers of young pigs and lambs. At other times he contents himself with fowl; and ducks, geese, and gulls fall victims to his insatiable appetite. Its nest is commonly built on the top of a large tree, generally a pine or a cypress, and growing in the midst of a morass.



Great Sea Eagle's Nest
(206)



Hawking for Wild Ducks.



Hawk.



Peregrine Falcon.



Going a Hawking.



Hawking.

ONE of the most remarkable members of the Falcon family of birds is the Peregrine Falcon. Its range is over Europe, the North of Asia, America and New Holland. Its length is rather more than a foot and a half. It has its nest on the rocks, and produces three or four eggs of a reddish hue, with brown spots. Its flight is amazingly rapid. Its food consists chiefly of small birds, though it will sometimes give battle to the Kite, and extend its ravages to the poultry yard. There are reckoned at least ten varieties, dependent chiefly upon age, sex and country. From its successful pursuit of ducks, it is often called the Duck Hawk. Under the name of Gentle Falcon, this bird was in ancient times required to be trained and kept for the use of the Scottish Court by the king's falconer; and as long as the office was kept up, a nest of young birds was required annually to be presented by the falconer to the Barons of Exchequer.



Death of the Heron.



Casting off the Hawk.

Though now out of fashion in Europe, hawking is still a common amusement among the Turks, in some parts of Asia Minor, among the Persians, Circassians, and the wandering hordes of Turkomans and Tartars. For most species of game, it appears that spaniels, cockers, or other dogs were required to rouse the birds to wing. When at a proper elevation, the Hawk, being freed from his head-gear, was east off from the sportsman's fist, with a loud whoop to encourage her. When thus cast off, the Hawk flew in the direction of the game, and endeavored to surmount it, or get above it in its flight. When the Hawk reached a proper elevation above the game, she shot down upon it with all her force and velocity, and this descent was techically called "the stoop," or "the swoop." When the Hawk closed or grappled with its prey (which was called binding, in falconry,) they generally tumbled down from the sky together, and the object of the sportsman was, either by running on foot or galloping his horse, to get to the spot as soon as they should touch the earth, in order to assist the Hawk in her struggle with her prey.

The Falcons, it should be observed, were taken into the field with hoods over their eyes, and with little bells on their legs; and the sportsman carried a lure, to which the bird had been taught to fly by being fed regularly upon or near it, with fresh killed meat. These lures seem to have been of various sorts. In very old times, a "tabur-stycke," which was merely a piece of wood, rounded and besmeared with blood, was in use; but with the progress of civilization, a better lure, called a "hawker," was introduced. The hawker was a staff about twenty-two inches long, cased at the upper part with iron, having a bell "rather of sullen tone than musical," and the figure of a bird, with outstretched wings, carved at the top.



Merlin, or Stone Falcon.



Jer Falcon.



Luring the Falcon.

The Jer Falcon, a corruption of *Hierofalco*, Sacred Falcon, its ancient name, is larger than the Peregrine. It is a native of Iceland. It breeds on the rocks, and lays from three to five spotted eggs: feeds upon birds, which, when it eyes them from its eyrie or its course in the sky, it darts down upon like an arrow. In the days of falconry, this bird was in high esteem, and used for the larger game, such as cranes and herons. Its plumage is white, with dusky lines; the dark spots on the wings are large, the throat and long thigh feathers pure white.

The Merlin, or Stone Falcon, is among the least of the European species. The body above is of a bluish grey color, with a longitudinal black spot on each feather; beneath, the throat is white, and the remainder yellowish-white, with oblong dusky spots pointing downward; the tail feathers have an entire dark broad band, tipped with white at the end; the female plumage is tinged with brown, and the spots below are more numerous. They nestle in trees or on the ground, and have five or six eggs, white, marked with greenish at the one end. It flies low, but its motions are so quick as almost to elude the sight; it was formerly used for taking partridges, which it would kill by a single stroke on the neck. It is a migratory bird common to Europe and America.

THE HAWK.



Sparrow Hawk, watching for prey.



Sparrow Hawk.



Goshawk.

The Goshawk is twenty-one inches in length; the bill and cere are blue; crown black, bordered on each side by a line of white, finely speckled with black; upper parts, slate, tinged with brown; legs feathered half way down, and, with the feet, yellow; the breast and belly white, with a number of wavy lines or bars of black; the tail long, of an ash-color, and crossed with four or five dusky bars; wings much shorter than the tail. The Goshawk frequents the deep solitudes of forests, preying upon hares, squirrels, and the larger ground birds; it also feeds on mice and small birds, and eagerly devours raw flesh. It plucks the birds very neatly, and tears them into pieces before it eats them, but swallows the pieces entire. The Goshawk is abundant in the forest districts of continental Europe, and extends also through the temperate regions of Asia and America. It was formerly used in Europe in the once celebrated pastime of falcōnry.

The Chanting Hawk is the only known bird of prey which sings agreeably. It is a native of Africa. It utters its song every morning and evening, and sometimes continues singing the whole night long. In size it equals a Goshawk; its plumage is grey above, white barred with brown on the lower part of the back and on the under parts of the body. It preys upon large birds, hares, and other animals; it builds in trees.



Chanting Hawk.

The Sparrow Hawk is a bold and spirited bird, but the most pernicious of the Hawk kind, making great depredations among pigeons, partridges, and the young of domestic poultry. The difference of size between the male and female is very disproportionate; the former measuring about twelve, and the latter fifteen inches. Individuals of this species also vary considerably in their colors. It is found in considerable numbers in various parts of the world, from Russia to the Cape of Good Hope. This bird was held in great veneration among the ancient Egyptians, because it was made the emblem of their good Osiris. Among the Greeks it was consecrated to Apollo.



Barn Owls.

THE Owls, some few excepted, are nocturnal in their habits; they come forth with the dusk of evening, to prowl for food; they winnow the air with silent pinions, their ears attentive to every slight sound, and their eyes quick to discern their creeping prey, on which they glide with noiseless celerity. The organic endowments of these nightly marauders are in admirable concordance with their destined mode of life. The eyes are large and staring, but they are incapable of bearing the strong light of day; the iris is irritable, and the pupil almost completely contracted; the lids are half-closed, and the membrana nictitans almost constantly drawn over the ball, like a delicate curtain; but when twilight sets in, the eyes display a very different appearance, the lids are wide open, the curtain folded back, the pupil is dilated, and they gleam with lustrous effulgence.

The Barn Owl is spread throughout the temperate and warmer regions of Europe. It conceals itself during the day in deep recesses among ivy-clad ruins, in antique church towers, in the hollow of old trees, in barn lofts, and similar places of seclusion. At night it sallies forth for prey, which consists of mice, rats, moles, and shrews.



Great, or Eagle Owls.

The Great, or Eagle Owl, is a native of the forests of Hungary, Russia, Germany, and Switzerland, and is said to occur eastward as far as Kamtchatka. It is upwards of two feet in length. It makes its nest in the fissures of rocks and deserted buildings. It preys on partridges and other birds.



Horned Owl of Virginia.



Horned Owl.



Hawk Owl.

The Virginian Horned Owl is a native of North America, being found in almost every quarter of the United States, and in the fur-countries where the timber is of large size. Wilson thus describes the haunts and habits of the Virginian Horned Owl:—"His favorite residence is in the dark solitudes of deep swamps, covered with a growth of gigantic timber; and here, as soon as evening draws on, and mankind retires to rest, he sends forth such sounds as seem scarcely to belong to this world. The flight of this bird is elevated, rapid and graceful. It sails with apparent ease in large circles, and rises and descends without the least difficulty, by merely inclining its wings or its tail as it passes through the air." It preys upon birds, domestic poultry of all kinds, and small quadrupeds.

The Hawk Owl is a native of the arctic regions of both continents. Wilson says that this species is rare in Pennsylvania and the more southern of the United States, its favorite range being along the borders of the arctic regions, making occasional excursions southward when compelled by severity of weather, and consequent scarcity of food. It preys by day, its eyes being adapted for a dull light, and its flight is steady. From these circumstances it has obtained its English appellation. From the writer alluded to, we learn that it is bold and active, and will follow the fowler, carrying off his game as soon as shot.



Fish Hawk robbed of its prey by a Bald Eagle.



Fish Hawk.

The Kite, a large and handsome, but cowardly bird, is spread over Europe, Asia, and Africa. It measures nearly three feet from the end of its yellow bill to the tip of the tail, which is dark colored and forked; the feathers above are deep brown, with pale edges; the under parts are of a rusty iron-color, with dark longitudinal stripes. It breeds on trees, and forms its nest of sticks, lined with wool, laying two or three eggs, white, spotted with dirty yellow. It is known by its flight, which resembles a sailing or gliding through the air, without the least apparent motion of its wings. When pressed by hunger, it assumes an unusual boldness, and making a sudden clutch, will carry off young chickens even from under the eye of the hen.

The Buzzard is common in all the wooded districts of Europe and the adjacent parts of Asia, and has been met with in the fur countries of North America. It builds in large woods, usually seizing the old nest of a crow, which it enlarges, and lines with wool and other soft materials; the female lays two or three eggs the size of a hen's, white, with rusty spots at the larger end. It is of an indolent, sluggish nature, often remaining perched on the same bough for the greatest part of the day. It feeds on mice, rabbits, frogs, and birds, pouncing on its prey on the ground.



Kite.
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Sparrow Hawk.



Buzzard.



Whip-poor-Will.



Group of Birds.

THE birds of the Night-Jar family spend the hours of day in repose, shrouding themselves from observation in the gloom of woods. At evening they come forth to feed upon such insects as, like themselves, are roused from inertia by the approach of darkness. They take their prey upon the wing. Their beak is small, but the gape is enormous, reminding one of the mouth of a toad.

The Night-Jar, proper, is found in all parts of Europe, where it is a bird of passage, retiring to Africa to spend the winter. It is called Night-Jar, because in the evening, while on its perch, it utters a peculiar kind of jarring note.

The Whip-poor-Will and the Chuck-Wills-Widow are both found in the United States, and derive their singular names from their cry, which is said closely to imitate the words that have been assigned to them as their names. Both the birds fly by night, or rather in the dusk of the evening, and like the owl are much distressed by being forced to face a brilliant light. The Chuck-Will's-Widow is partially migratory, and dwells in the more southern parts of America during the winter. Audubon relates that this bird applies its enormous mouth to rather an unexpected use, viz., that of removing its eggs, if it finds that they have been disturbed. Of this curious circumstance he was an eye-witness. He saw the bird that first discovered that an intruder had touched the eggs wait for its mate, and then saw each of them take an egg in its mouth and convey it off.



Night-Jar.



Chuck-Will's Widow.

Sparrow Hawk.
(214)

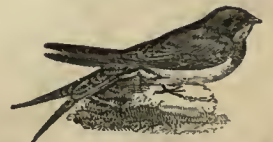


Papuan Podargus.

The Papuan Podargus is another species of the Night-Jar family, and is a native of Australia. It appears to be nearly related to a Japanese species, described under the title of *Podargus Javanensis*, and is very characteristic of the group to which it belongs. As we have already observed, the Night-Jar is a migratory bird throughout every part of Europe; but whether the species of the genus *Podargus* obey a similar law is not very clear. With respect to nocturnal habits, the members of the genus *Podargus* are more confused by light than the ordinary Night-Jar. They haunt the solitudes of the woods, and the sombre but intermingled tints of their plumage screen them from observation. At night they issue forth on their aerial chase, and retire with the first streaks of day to their wonted seclusion.

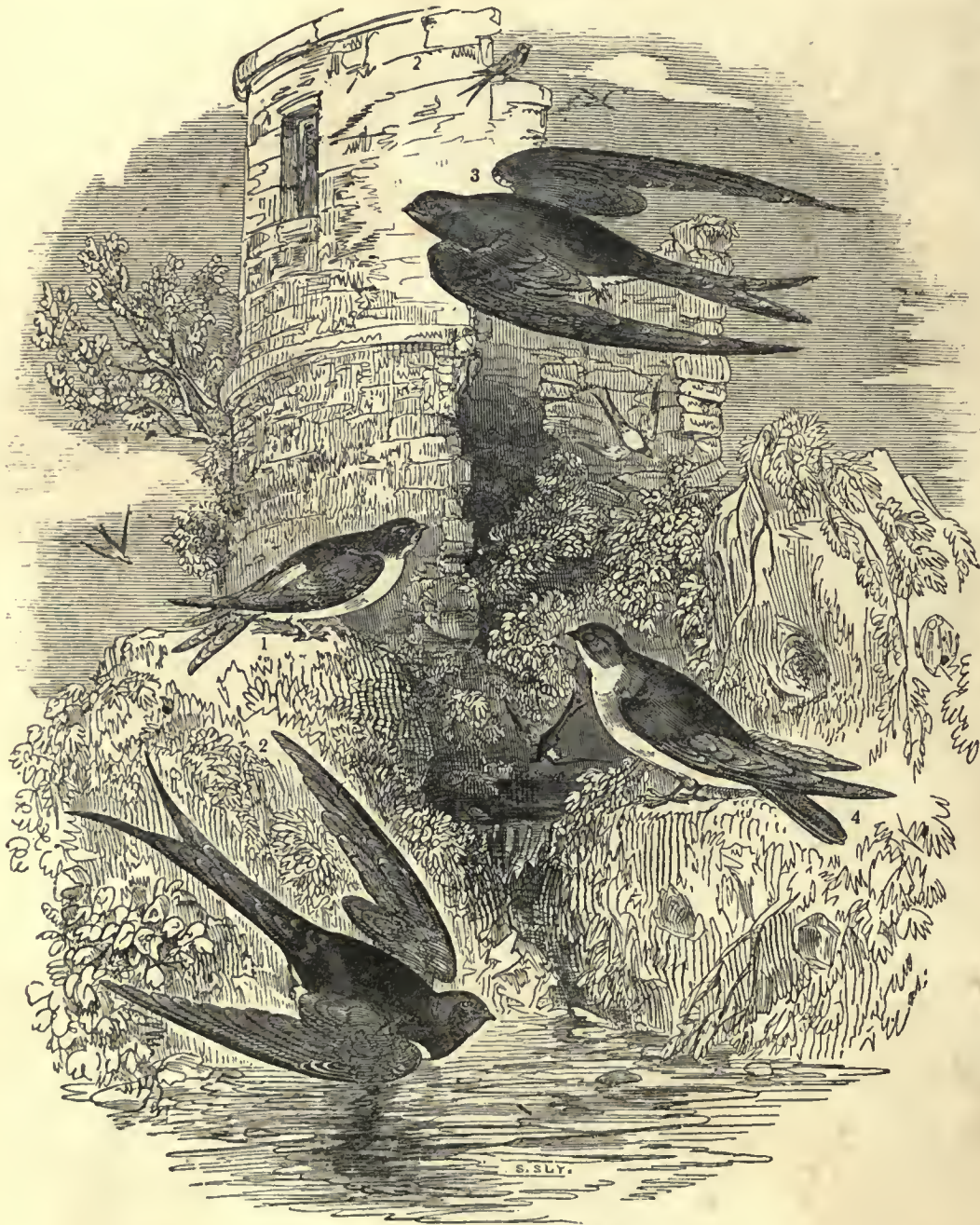
Blue Bird.
(215)

Owl.



Martin.

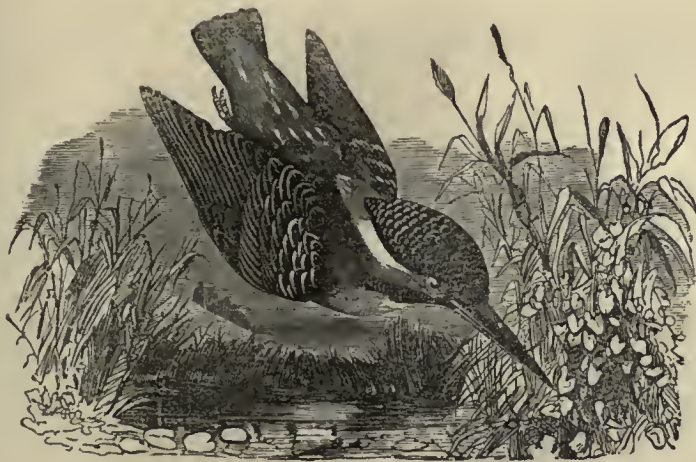
THE SWALLOW.



1 European Swallow. 2 Martin. 3 Sand Martin. 4 Swift.

“THE European Swallow,” says a British author, “is one of my favorite birds. He is the joyous prophet of Spring. Winter is unknown to him, and he leaves the green meadows of England in autumn for the orange groves of Italy, and the plains of Africa.” This bird much resembles the American Barn Swallow, whose habits and appearance are well known.

The Martin and the Sand Martin are both birds of the Old World, as is also the Swift. The Sand Martin, it will be observed, is found abundantly in the United States, where it builds its nest in holes dug out of the sandy banks. All these birds have the same general character; and they are all among the familiar friends and favorites of young people.



Common Kingfisher.



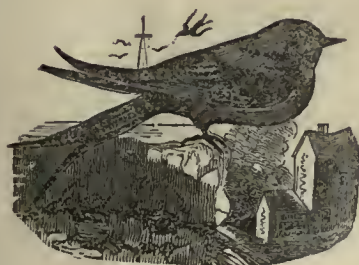
Eagle, devouring a Lamb.

The Barn Swallow inhabits America, and receives its name from its frequently attaching its nest to the rafters in barns. These birds are easily tamed, and soon become very gentle and familiar. Their song is a sprightly warble, and is sometimes continued for a length of time.

The Purple Martin is a native of the United States and Canada to Hudson's Bay. It is a general favorite, and takes up its abode among the habitations of men; and in some parts of the Union considerable expense is sometimes incurred in preparing for it a suitable residence.

The Common, or European Kingfisher, is a retired and solitary bird, which is only to be found near rivers, brooks, or stagnant waters, subsisting entirely on the smaller kinds of fish.

The American, or Belted Kingfisher, is distinguished by being of a bluish slate-color, with a ferruginous band on the breast; having a large collar of pure white round the neck, and an elevated crest on the head. It inhabits all parts of the North American Continent, and is the only species of its tribe found within the United States.



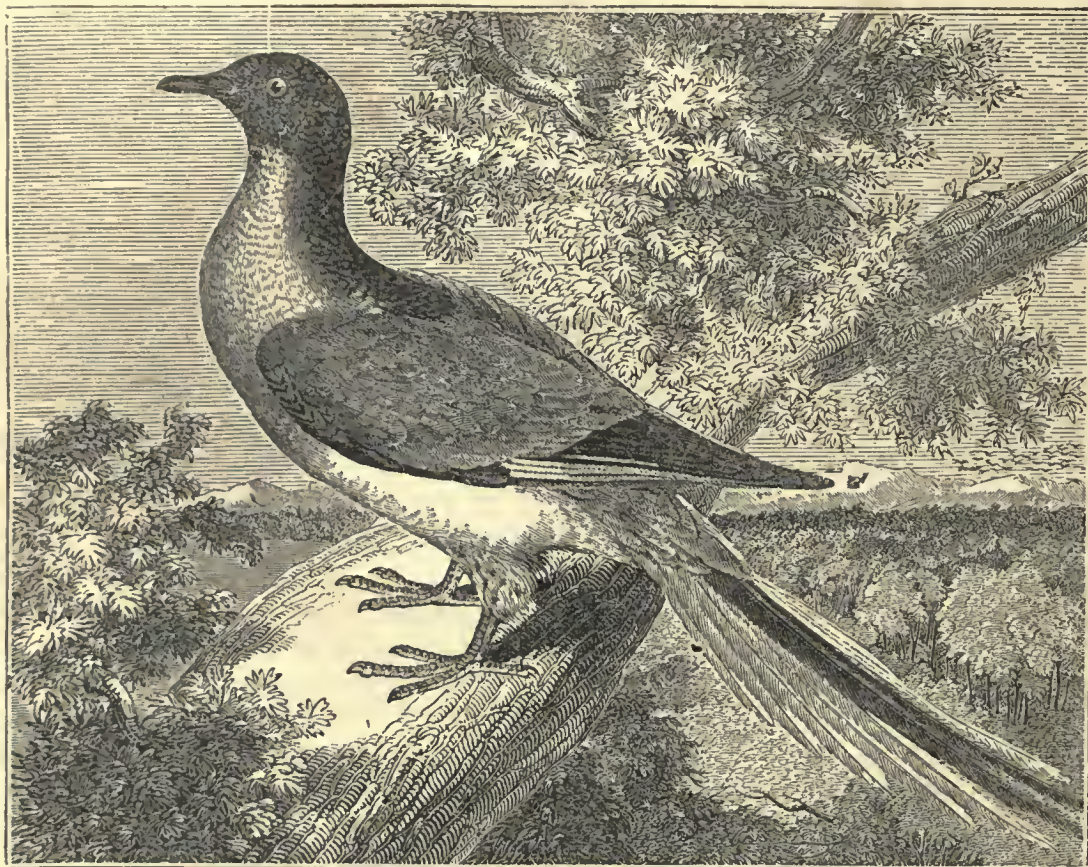
Purple Martin.



Belted Kingfisher.

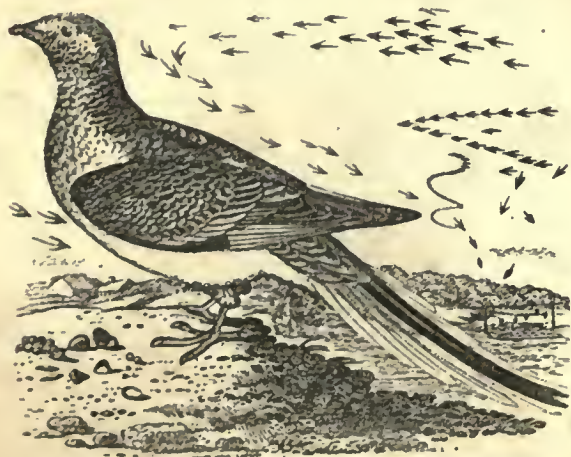


American Barn Swallows.



Passenger Pigeon.

THE powers of flight of the Passenger Pigeon is almost incredible. It is a native of America, and over-spreads the country in countless myriads during the breeding seasons. Pigeons have been killed in New York with Carolina rice still in their crops. As their digestion is remarkably rapid, these birds must have flown between three and four hundred miles in six hours, giving an average speed of a mile per minu'e. Not far from Shelbyville, Kentucky, some years ago, there was a breeding place, in the woods, several miles in breadth, and said to be *upwards of forty miles in extent!*



Passenger Pigeon.



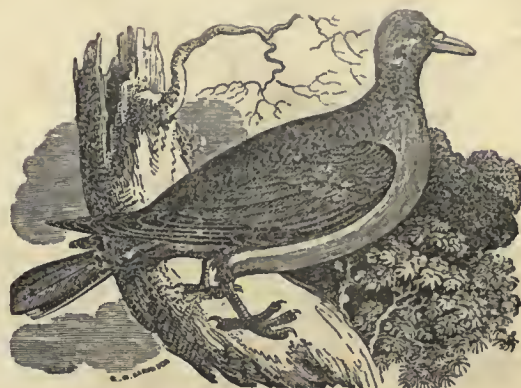
Passenger Pigeon.



Crowned Pigeon.



Wild Pigeon.



Wild Pigeon.

The Wild Pigeon exhibits a variety of beautiful hues in its plumage; deep blue, brilliant green, purple, gold, ash, pale red, &c. It builds in the holes of rocks, among woods, the hollows and clefts of old trees, and similar places, and commonly has two broods in a year.

The Great Crowned Pigeon in size is nearly equal to the Turkey; the greater part of its plumage is of a fine purple, or bluish-ash color; the middle of the back, and the coverts of the wings, are of a dark reddish-brick color. The head is adorned with a handsome crest of a pale blue, or ash color. This splendid bird is a native of the East Indian Islands; it coos, and has the actions and manners of other Pigeons.

The Double Crested Pigeon is found in New Holland and Java. It has two crests of feathers, one on the front and another on the back of its head. It is about seventeen inches in length.



Crowned Pigeon.



Double Crested Pigeon.

THE PIGEON.



Brown-backed Peristera.



Manasope Pigeon.



Pouter.



Tumbler.

The Tumbler is a very little domestic Pigeon, and derives its name from its singular habit of falling backwards when on the wing.

The Pouter is a large domestic Pigeon. It stands particularly erect, and seems exceedingly vain of the swollen crop which gives it the name of Pouter. The bird is enabled to inflate its crop with air, until the head is almost hidden behind it. This inflation sometimes causes the bird to lose its balance, and fall down.



Pouter.

The Brown-backed Peristera is a Pigeon found in Southern Africa, where it is said to frequent woods; but little appears to be known respecting it. Its principal lines are brown, green, black, and pale orange-brown.

The Manasope is an elegant Pigeon, found in the deep forests of New Guinea. It is about nine inches long.



Passenger Pigeon



Chesnut Shouldered Pigeon.



Bronze Winged Pigeon.

The Chesnut Shouldered Pigeon is a beautiful bird, which appears to resemble the Ring Dove in its habits. It is a native of New Zealand, and is very abundant in the Bay of Islands.

The Bronze Winged Pigeon is a native of Australia. It frequents dry, sandy places, and is generally seen either on the ground or perched on low branches, or decayed stumps of trees.

The Helmet Pigeon is one of the tame varieties, so called from a tuft of feathers on the back of the head resembling the crest of a helmet.

The Carrier Pigeon is larger than the Common Pigeon, and its form indicates great strength and activity. The wattles on the beak, and round the eye, are very remarkable. Its feats of letter-carrying are well known.

Among many facts which may be depended on, relative to the extraordinary qualities of the birds of the Carrier kind, we select the following.

A gentleman sent a Carrier by the stage-coach from London, to a friend at St. Edmundsbury, with a note, requesting that the Pigeon might be set at liberty two days after its arrival, precisely at nine in the morning. The person at St. Edmundsbury punctually attended to this request; and the Pigeon arrived in London at half-past eleven o'clock the same day; thus having performed a distance of seventy-two miles in two hours and a half.



Helmet Pigeon.

(221)



Ring Dove.

19*



Carrier Pigeon.



Receiving the Carrier Pigeon.



Sending forth the Carrier Pigeon.

The Wattled Ground Pigeon is a native of South Africa. They live on insects and grain. They are about the size of a Turtle Dove. The base of the bill and forehead are covered with a naked wattle, and another wattle hangs from the chin.

The Oceanic Fruit Pigeon is found in the Caroline, Philippine and Pelew Islands. It is fourteen inches in length. The feathers of the forehead, cheeks, and throat are whitish mixed with grey; the head and the back of the neck are of a deep slaty grey; the back, rump, wing-coverts, quills, and tail feathers, are of a uniform metallic green, passing into brown on the interior of the great feathers; the breast and upper part of the belly are grey, with a tint of rust-color.



Oceanic Fruit Pigeon.



Wattled Ground Pigeon.



The Rock-dove.



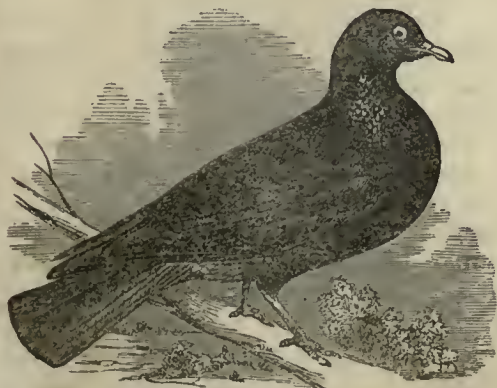
The Aromatic Vinago.

The Stock-dove builds its nest in the stocks of trees, (from whence its name,) and has been known to lay its eggs in deserted warrens, without making any nest at all. In former times, when forests of beech trees used to cover the country, enormous flocks of these birds frequented them, in order to feed on the beech mast. Now they are not so common, although still in considerable numbers.

The Turtle-dove, a bird much revered by poets for its constancy, is found in Europe. Its nest is a mere platform of twigs, on which the eggs are laid. The constancy and affection of this bird for its mate has been deservedly celebrated in all ages, though it is not easy to understand why other birds, such as the Raven, whose constancy is quite as remarkable, should be deprived of the meed of praise due to them.

The Rock-dove is the original parent of most of our curious varieties of domestic Pigeons. It is found wild in most parts of Europe and the north of Africa.

The Aromatic Vinago is a native of India, Java, and the adjacent islands. It is said to climb the trees with great address, and to frequent the banyan, on the small red fig of which it feeds; whilst its color so blends with that of the foliage that it is difficult, even when a flock is among the branches, to distinguish the birds, unless they flutter about. In the breeding season the pairs retire into the recesses of the forest and re-assemble into flocks after the young are reared. The nest is a slight platform of sticks and twigs.



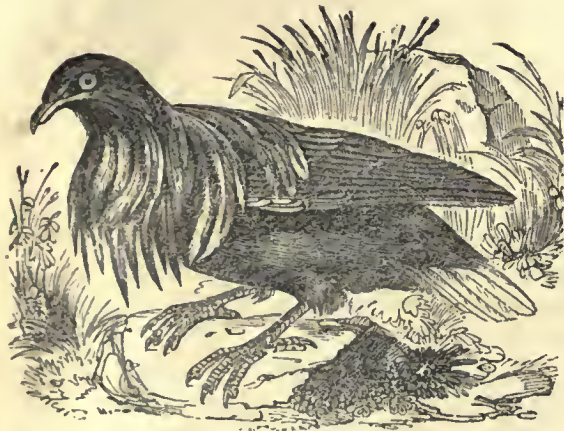
(223) The Stock-dove.



The Turtle-dove



Talpicoti.



Nicobar Pigeon.



Phasianella.

The Phasianella is a beautiful species of Pigeon, found in Australia, the Philippine and Molucca islands, and Java, where it inhabits the woods, feeding on pimento and various other aromatic berries. Its flesh is dark colored, but of excellent flavor. The total length of this species is about sixteen inches. The wings are short; the tail long and graduated. The upper plumage is deep reddish brown with bronze reflections. The head, sides, and front of the neck, and whole of the under plumage, are orange-brown. The hinder part of the neck changeable violet, purple, and brilliant gold. Legs reddish-brown.

The Nicobar Pigeon is a splendid bird, found in Java, and the neighboring islands. Its plumage is very refulgent; the neck is ornamented with long, flowing, pointed feathers. The whole upper surface is burnished with bronze and steel-blue reflections of glossy green; the under surface is the same, but not quite so brilliant; the tail, which is very short and square, is pure white. A fleshy tubercle rises on the base of the upper mandible in the breeding season. Length about fourteen inches.

The Talpicoti is a little Pigeon found in Brazil and Paraguay. It frequents the borders of woods, in families of four or six, but never in large flocks; these perch on low bushes and underwood, at a little distance from the ground, to which indeed they constantly resort; they are often to be seen near houses in the country and farmyards, and, when captured, speedily become reconciled to the limits of an aviary, and breed freely. Their nest is mostly placed in some bush; never on the branches of tall trees. Berries and grain constitute their food. Length six inches and a quarter. Top of head and back of neck grey; cheeks and throat pinkish white; plumage above brownish orange, with black marks on some of the wing coverts; under plumage deep vivacious red; tail brownish black.

THE FINCHES.



1 Grey Linnet. 2 Greater Redpole. 3, 4 Goldfinches, male and female. 5, 6 Siskins, or Aberdevines.

THE above are all English birds. The Linnet is a sweet singer, and frequents commons and neglected pastures. The Redpole is very similar to the Linnet. It is easy to tame. The Goldfinch has beautiful markings in its plumage, and is a favorite songster. It is sometimes brought to this country as a cage bird. The Siskin is also a favorite cage bird. It has an agreeable note; and in appearance it greatly resembles the common English Linnet. It is found on the continent as well as in England, and is a favorite pet bird in Germany.



American Bullfinch.



Arabian Bullfinches.

The American Bullfinch is found in Brazil. The head, cheeks, back, and scapulars ashy-bluish, wings and tail darker, but all the feathers of those parts are bordered with ash-color. There is a small white spot on the wing, formed by the white towards the base of the quills, beginning with the fourth; the three first have no white. All the lower parts are white, with the exception of the flanks, which are clouded with ash-color. Bill coral red, very strong, large, and as it were swollen; feet ash-colored; length four and-a-half inches. Inhabits Brazil where it is said to be common.



Wren.

The Arabian Bullfinch is found near Mount Sinai, in Arabia. The adult male is ornamented round the base of the bill with a circle of rich red, going off in spots upon the cheeks. The front is covered with small lustrous white feathers, of a silvery white, lightly shaded upon the borders with red; all the lower parts of the body, the inferior coverts of the tail are of a brilliant rose-color, or clear carmine; the upper parts are ash-colored, lightly tinged with rose; wings and tail brown, with ash-colored borders. The female is brown, of a light brown or earth-color above, with longitudinal lines of deeper brown upon each feather.



1 The Fieldfare. 2 The Redwing.

THE Fieldfare, one of the family of Thrushes, a large, handsome bird, known also by the provincial names of Feltyfare, Pigeon Fieldfare, Felty-flier, Grey Thrush, &c. In length it is generally about ten inches, weighing somewhat more than four ounces. The head and hind part of the neck are of a greyish color, the former spotted with black; the bill is yellowish, but black at the point, the eyes hazel, the back and lesser wing-coverts chestnut, the breast and sides reddish-yellow, and the throat white; the legs are black, and the tail approaching to the same color. They are found in England about October, and continue, if the weather is moderate, until April, when they return; but if the winter should prove severe, they fly off to more southern countries. A sudden fall of snow, however, will prevent their flight; and should it continue, great numbers starve. Although this bird is furnished with a hard bill to enable it to feed on seeds, &c., it has no dislike to insects, and indeed seems to prefer them when they can be easily procured.

The Redwing is very similar to the Thristle or common Thrush, with which it is often seen among the hawthorn trees and ivy bushes, or roaming over the meadows in search of food; but it is less in size, and has a white streak over the eye, which in that bird is wanting. It is about eight and half inches in length, and of the average weight of two and a half ounces. The bill is of a dusky color, except at the base of the upper mandible, which partakes of a yellowish hue; the eyes are dull, the back and upper parts brown, the lower part of the breast white marked with dusky lines, the body under the wings reddish-orange, and the legs pale-brown. The song of the Redwing, when heard in its native woods, has such a charming effect, heightened by the rough character of most of the other woodland sounds of a northern country, that the bird has been called the Nightingale of Norway. Both the Redwing and Fieldfare are said by Linnaeus to frequent high trees, building their nests near those places where junipers grow.



1 Pied Fly Catcher. 2 Spotted Fly Catcher.

THE Spotted Fly Catcher is known by several provincial names, all derived from its habits; as the "Beam-bird," (from a favorite site of his nest,) and the "Cherry-chopper," (from a supposed taste for the fruit of that tree.) In some parts of England it is called the "Post-bird," and in other parts the "Bee-bird." It is about six inches in length, and of rather a dark color; its breast is a dullish white, slightly tinged with dull orange, and the upper part of the body is brown. Its bill is of a dusky color, hooked and fringed with some little bristles or hairs at its base. It is a very tame bird, and will often build its nest in a hole in a wall or near a door-post where people are continually passing and repassing; it seems particularly partial to the vine and sweetbrier, for the foundation of its nest, and may often be seen among the leaves near the windows of a cottage. It also chooses the projecting beams or rafters of a house for the site of its nest, and this so frequently as to have caused it to be called the beam or rafter bird. The Fly Catcher makes little pretension to song, but occasionally utters a little inward wailing note.

The Pied Fly Catcher is a much less common bird, though it has been supposed to be indigenous to England. It is about the size of the Linnet, but, from its shape has been compared to a magpie in miniature. The crown of the head is black, which color also pervades the bill, but there is a white spot on its forehead, from which its name is derived; the rest of the body is composed of various shades of black, brown, and white, the latter covering the breast. Notwithstanding that some naturalists consider this bird to be indigenous to England, others maintain it to be a summer bird of passage; and it is said by Mr. Bolton and the Rev. Mr. Dalton to arrive in Yorkshire in the summer, and to depart before October. It is scarcely ever to be met with in the south of England, and not very frequently in the north; but Colonel Montagu remarks that great numbers may be seen at Lowther Castle, Westmoreland, where it has bred for many years.

THE FLY CATCHERS.



King Bird, or Tyrant Fly Catcher.



Pewit Fly Catcher.



Red-eyed Vireo, or Fly Catcher.



Linnet.



Goldfinch.

The King Bird takes up his summer residence in all the intermediate regions, from the temperate part of Mexico to the remote interior of Canada. In the months of May, June, and part of July, his life is one continued scene of broils and battles; in which, however, he generally comes off conqueror. Hawks, and crows, the bald eagle, and the great black eagle, all equally dread a rencounter with this dauntless little champion, who as soon as he perceives one of these last approaching, launches into the air to meet him, mounts to a considerable height above him, and darts down on his back, sometimes fixing there to the great annoyance of his sovereign, who, if no convenient retreat or resting-place be near, endeavors by various evolutions to rid himself of his merciless adversary. But the King Bird is not so easily dismounted. He teazes the eagle incessantly, all the while keeping up a shrill and rapid twittering; and continuing the attack sometimes for more than a mile, till he is relieved by some other of his tribe equally eager for the contest.

The Pewit Fly Catcher is a very familiar bird, inhabiting the continent of North America, from Canada and Labrador to Texas, retiring from the Northern and Middle States at the approach of winter. Their favorite resort is near streams, ponds, or stagnant waters, about bridges, caves, and barns, where they choose to breed.

The Red-Eyed Vireo is a common but sweet songster, found in every part of the American continent, from Labrador to the mild table land of Mexico. It inhabits the shady forests or tall trees near gardens and the suburbs of villages, where its loud, lively, and energetic song is often continued, with little intermission, for several hours at a time.

THE BUNTING.



1 Common Bunting. 2 Yellow-hammer, male. 3 Ditto, female. 4 Black-headed Bunting.

THE above are all English birds. They are usually placed between the Grosbeaks and the Finches, the construction of the bill constituting its chief peculiarity, and marking it as a distinct tribe. The Common Bunting is found in the corn-growing districts. In winter it generally becomes gregarious, and may be seen in the company of Linnets, Chaffinches, and other birds. It is often brought to market in winter and sold with Larks. Its plumage is brown, and it is considerably larger than any of the family of Finches. The note of the Bunting is harsh and disagreeable. The Yellow-hammer, though not a very interesting, is rather a pretty bird, the head being of a bright yellow, variegated with brown, and the cheeks, throat, and lower part of the abdomen are quite yellow. In winter it is common in every hedge. The song of the Yellow-hammer consists of little more than a monotone, repeated quickly several times, some emphasis being laid on the last note, which is also at greater length.

The Reed Bunting, a third variety, frequents marshes, and is rather a handsome bird, with a black head. It occasionally sings during the night. Montagu says that its song "consists only of two notes, the first repeated three or four times, the last single and more sharp." An undeserved reputation as a good songster is given to this bird. The reason is that the Sedge-warbler, whose merits as a vocalist are really superior, frequents the same haunts as the Reed Bunting; and while the latter bird renders himself prominent when singing, the Sedge-warbler utters his liquid, pleasant notes concealed from view. The Cirl Bunting, which is scarcely found in any part of England except Devonshire, differs but little from the Yellow-hammer in form. The Snow Bunting is an occasional visitant, being driven to the northern parts of Great Britain only when the winters of a still higher latitude are more than usually intense. Its summer haunts are within the Polar Circle, and it lives nearer the Pole than any other bird. It has its summer and winter dress, the former white, and the latter brown.



1 The Nightingale. 2 Blackcap. 3. Wren. 4 Redbreast. 5 Sedge Warbler. 6 Whitethroat.

THE above birds are all British. The Nightingale is a summer visitor to England, and the European continent, migrating in winter into Egypt and Syria, and the northern districts of Africa. It is also a native of Asia, where its song is as celebrated as in Europe. It haunts close shrubberies, copses and dense coverts. It sings at night.

The Blackcap is scarcely inferior to the Nightingale in its musical powers. It is very shy and retired, frequenting woods, thickets and orchards.

The Sedge-Warbler lives in marshes on the banks of rivers and lakes. The other birds of the above group will be noticed on another page.



Wheatear.



Nightingale.

The Robin, the famous Robin Redbreast of ballad and song celebrity, is different from the American Robin, being smaller, and more familiar in its habits.

The Whitethroat is a migratory bird, visiting Europe in the summer. It is about five inches and a half in length. Its musical powers are not remarkable.

The Wheatear is a bird well known throughout Europe, as well as in the northern parts of Asia. It is about five inches and a half long. It is found in mountainous and stony districts. During its migrations it will perch in fields upon isolated stumps, boundary stones, and other elevated spots. It is rarely seen in bushes or upon trees. It leaves during the first half of September, and returns during the first half or about the middle of April, when the night frosts have ceased. When wild it feeds upon all kinds of beetles and flies, which it catches as they run along. In captivity it must immediately have a quantity of ants' eggs and meal-worms. It usually dies of dysentery, and, what is most singular, even when it has not tasted the house food. It may subsequently be fed upon Nightingale food, and also occasionally upon roll steeped in milk. It can be preserved thus for a couple of years. It must be placed in a Nightingale cage, or in a large breeding cage. It may also be allowed to run freely about, but not before it has been accustomed to confinement, for if not well fed at first it usually dies. It can rarely be tamed.



Goldfinch.



Lark.



1 Pipit Lark, as he appears in the act of descending from his song-flight. 2 Woodlark. 3 Thrush. 4 Blackbird. 5 Skylark, male, female, and nest.

These are all British Birds. The Thrush, or Throstle, sings from the commencement of spring to the close of summer, with untiring note. Its song is full of sweetness and variety. The song of the Blackbird is less varied, but richer and mellower. He breaks the shell of the snail against a stone, to get at the animal inside. The Lark tribe do not hop, like the sparrow, but walk or run. The Skylark is one of the most celebrated of all the songsters of Europe. It builds on the ground, and lays five eggs in its nest. Selby says the Pipit Lark is in reality the common Pipit in its renewed and winter plumage. Its changes of plumage during the summer occasions some confusion in assigning its proper place among birds.



Blue-throated Redstart.



Blue Bird.

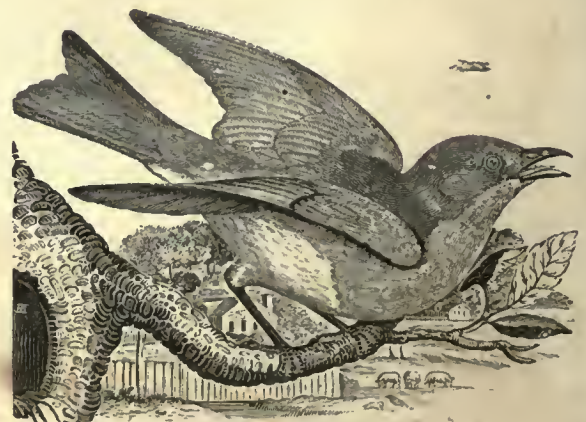
THE Blue Bird, that harbinger of spring to the Americans, like the English Redbreast, "is known to almost every child, and shows," says Wilson, "as much confidence in man by associating with him in summer, as the other by his familiarity in winter." The food of the Blue Bird consists principally of insects. The nest is built in holes in trees, and in the top of fence posts, and similar situations. Its song is cheerful, and is most frequently heard in the serene days of the spring.

The Blue-throated Redstart is a native of most parts of Europe. It is a remarkably beautiful bird, and derives its name from its throat being marked with a broad band of the richest sky-blue.

The American Redstart is found in almost every part of North America, withdrawing, at the approach of winter, to the West Indies, Mexico, and Central America. It is a beautiful, lively bird, and warbles with much sweetness. The nest of the Redstart is very neat and substantial; fixed occasionally near the forks of a slender hickory or beech sapling, but more generally fastened or agglutinated to the depending branches or twigs of the former; sometimes securely seated amidst the stout footstalks of the waving foliage in the more usual manner of the delicate cradle of the Indian Tailor-bird, but in the deep and cool shade of the forest, instead of the blooming bower.



American Redstart.



Blue Bird.



Caroline, or Mocking Wren.



House Wren.



Humming Bird.



Black Cap.

The Black-throated Green Warbler is a rather rare passage bird, which reaches the middle parts of the United States about the close of April. It departs again for the south in October. Its song is simple and somewhat plaintive, but not unpleasing. It derives its name from the black hue of its chin and throat. Its breast and belly are white, tinged with pale yellow. It builds its nest in low thickets, and lays four roundish, white eggs.

The Maryland Yellow-throat is a very common bird in the United States, where it extends its migrations from Florida to Maine, arriving in New England early in May, and returning southward in September. It is a cheerful, though shy bird, dwelling near some gushing brook, in the shade of briars, brambles, and other low shrubbery. Its song is simple, though sweet and agreeable.

The House Wren is a lively, cheerful little bird, well known in the United States, where it makes its summer residence. It is found as far north as Labrador, but on the approach of winter, migrates to Mexico. It is likewise met with in Surinam, where its melody has won for it the nickname of Nightingale.

The Carolina, or Mocking Wren, is most frequently found in the southern parts of the United States, and derives its name from its remarkable power of mimicking, with the sweetest musical effect, the songs of a great variety of birds. The favorite song may be readily recognized. It is somewhat plaintive and sentimental, and by the country youth is translated into the words "sweet-heart-sweet," pronounced quite rapidly.



Black-throated Green Warbler



Maryland Yellow-throat.



Tame Canary Bird.

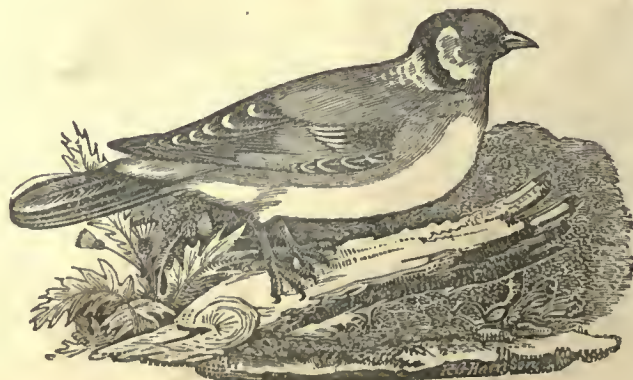


Wild Canary Birds.

THE Canary Bird, originally brought from the Canary Islands, is well known, having been long-domesticated in almost every country. In its native groves, its plumage is a dusky grey, but with us has all the variety of color usual among domestic fowls; some are white, some mottled, some beautifully shaded with green, but the most common is a yellowish white. It has a high, piercing pipe; dwelling upon the same note for some time in one breath, then rising higher and higher by degrees, it passes through a variety of modulations. Buffon eloquently remarks, "if the nightingale be the chantress of the woods, the Canary is the musician of the chamber: the first owes all to nature, the second something to art. With less strength of organ, less compass of voice, and less variety of note, the Canary has a better ear, greater facility of imitation, and a more retentive memory. Its education is easy: we rear it with pleasure, because we are able to instruct it. It leaves the melody of its own natural note to listen to our voices and instruments."



Black Cap.



Goldfinch



1 Greater Tit. 2 Blue Tit. 3 Coal Tit. 4 Marsh Tit.

THIS group consists of Tits, or Titmice, found in Britain. They are a numerous family of birds, and different species of them are found in almost every part of the globe.

The Greater Tit, called also the Ox-eye, is about six inches long. It is very common in woods and thickets. Its note is not remarkable, but various, and it can imitate other birds.

The Blue Titmouse, or Tomtit, is short and compact, but very pretty. It is very courageous. The female is very tenacious of her nest, and in the defence of it, often suffers herself to be taken rather than quit it, and when taken out, will return again to its protection.

The Coal Tit resembles the Tomtit, but is smaller, only four inches long, and with duller plumage. It builds its nest with much neatness in the hollows of trees.

The Marsh Tit, a little larger than the Coal Tit, is found among reeds and marshes in the northern part of Britain. Its food is chiefly insects, but in winter it feeds on seeds, and is often tempted to visit the farm-yard for pieces of meat, which it eats with much avidity; indeed its appetite is so great that it has been known to consume more than half its own weight of food per day. They dwell together in considerable numbers, and are perpetually in motion.



The Bottle Tit and its Nest.

The Bottle Tit is about five inches and a half in length. The bill is very short, the head round and covered with rough erect feathers; it has a very long tail, whence its specific name. It is of a brownish color, with black feathers in the tail edged with white. Its nest is generally placed in the forked branch of a large tree overhanging the water, and it lays from twelve to eighteen white eggs.



Domestic Fowls.



Wedge Tailed Eagle.



Wren.



Pique-Boeuf, or Oxbird.



Long-tailed Titmouse.



Guinea Hen.



Chickadee.

The Tufted Titmouse is very common in the southern parts of the United States. Its usual song partakes of the high, echoing, clear tone of the Baltimore Bird. As a cage-bird it is very desirable. According to the observations of Wilson, it soon becomes familiar in confinement, and readily makes its way out of a wicker cage by repeated blows at the twigs. It may be fed on hemp-seed, cherry stones, apple-pippins, and hickory nuts, broken and thrown into it.

The Chickadee, or Black-capped Titmouse, is a familiar, hardy, restless little bird, inhabiting the northern and middle states, as well as Canada. Its quaint notes and jingling warble are heard even in winter, on fine days, when the weather relaxes in its severity. It adds by its presence, indomitable action, and chatter, an air of cheerfulness to the silent and dreary winters of the coldest parts of America. Dr. Richardson found it in the fur countries up to the sixty-fifth parallel, where it contrives to dwell throughout the whole year.

The Long-tailed Titmouse, which is a native of Europe, constructs a very curious nest; it is of an oval form, with a small hole near the upper part for an entrance; the principal material of the nest is moss, bound together by the aurelia of insects; it is lined with down and feathers, so arranged that their soft webs all point inwards.

The Red-billed Pique-Boeuf, is a native of northern Africa. It lives on the parasitic insects infesting the hides of sheep, oxen, and the like. Fixed on their back, by means of his powerful claws, the Pique-Boeuf digs and squeezes out with his beak the larvae that lie beneath the festering skin, to the real benefit of the animal, who patiently submits to the operation.



Tufted Titmouse.



A Rookery.

THE Rook inhabits almost every part of Europe, and is very common in England, where it lives in a kind of semi-domestication, usually inhabiting a grove of trees near a house, or in a park, where it is protected by the owner, although he makes it pay for this accommodation by shooting the young once every year. Apparently in consequence of this annual persecution, the Rook has an intense horror of guns, perceiving them at a great distance. While feeding in flocks in the fields, or following the ploughman in his course, and devouring the worms and grubs turned up by the share, the Rook has always a sentinel planted in a neighboring tree, who instantly gives the alarm at the sight of a gun, or of a suspicious looking object.

The good which the Rook does by devouring the grubs of the cockchafer, and the tipulas or dady-long-legs, both of which are exceedingly injurious to the crops, more than compensates for the damage it sometimes causes, by pulling up young corn, or newly set potato cuttings; in the latter case more, I believe, to get at the wireworms, which crowd to the slices of potato, than to eat the vegetable itself. In the fruit season, the Rook, like most other birds, likes to have his share of the cherries, pears and walnuts, but may be easily kept away by the occasional sight of a gun.

Towards evening the Rooks may be seen flying in long lines to their resting-place—"The blackening train of crows to their repose." They then perform sundry evolutions in the air, and finally settle to rest.

Round the base of the Rook's beak is a whitish-looking skin, denuded of feathers, the reason or cause of which is not very obvious. A white variety of the Rook is sometimes seen. The gamekeeper at Ashdown had a very fine white Rook, which he kept tame in his garden.

The eggs of this bird are five in number similar to those of the Raven in color, but much smaller. The length of the bird is nineteen inches.



Cuckoo in a Hedge Sparrow's Nest.

THE Cuckoo places its offspring entirely under the protection of foster parents, leaving it to them to provide its food and to nourish it until it can shift for itself. Though this is not a pleasing trait in the character of the Cuckoo, the young bird is far from being ill-provided for in the place which it has usurped; but turning out the nestlings from the home which really belongs to them, they soon perish, while the intruder claims the services of the defrauded and bereaved parent birds, and thrives rapidly under their unceasing exertions to supply it with food. The Cuckoo always deposits its eggs in the nest of a bird which feeds upon insects. The nests of the Hedge Sparrow, the Reed Sparrow, the Titlark, the Wagtail, the Yellow-hammer, and others have been selected; and instances are mentioned of the nests of the Linnet and White-throat having been the place of deposit; but the greatest preference is shown to that of the Hedge Sparrow. Dr. Jenner's well known paper in the "Philosophical Transactions" of the Royal Society, 1788, threw great light upon this striking peculiarity; but there is still much room for observation on the habit. It seems doubtful whether or not the Cuckoo ever builds a nest of its own, but the general belief is that it does not; and whether the Cuckoo deposits the egg from her body while actually sitting upon the nest is equally a matter of doubt. For some time before the bird becomes independent of its foster parents it procures some part of its subsistence by its own exertions. The young bird generally continues in the nest three weeks before it flies, and it is fed more than five weeks after this period.

THE TOUCAN.



1 Aracari Toucan. 2 Red-bellied Toucan. 3 Toco Toucan. 4 Black and Yellow Toucan.

THE Toucan as well as the Aracaris, which they greatly resemble, are found in the warmest parts of South America. Their plumage is brilliant; and their feathers have been employed as ornaments of dress by the ladies of Brazil and Peru. Its enormous beak is nearly as long as the body.

THE TOUCAN.



Curl-crested Aracari.

This singular variety of the species Toucan is found in Brazil. It derives its name from the crown of its head being covered with a crest of curled, intense black, and glossy feathers.

THE PARROT.



a Blue and Yellow Macaws. **b** Carolina Parrot. **c** Sealed Parakeet. **d** Black-winged Psittacule. **e** Phillipine Psittacule. **f** Accipitrine Parrot.
g White-headed Parrot. **h** Sulphur-crested Cockatoo. **i** Banksian Cockatoo. **k** Goliath Cockatoo.

THE PARROT.



Sulphur-crested Cockatoo.



Rose-ringed Parrakeets.



Alexandrine Parrakeet.

It is now very generally admitted that the Psittacidae, or Parrots, form an independent family group, embracing many genera. Prominent among the Psittacidae is the Sulphur-crested Cockatoo, an inhabitant of New Guinea. Its color is white, and the crest is of a sulphur yellow. This Cockatoo is easily tamed, and is of a very affectionate disposition. When in captivity it has been known to live to the age of one hundred and twenty years. The eggs are white. The length of the bird is about eighteen inches. There are other varieties of the Cockatoo, as the Banksian, and Goliath.

The Macaws are natives of South America. The Blue and Yellow Macaw inhabits Brazil, Guiana and Surinam, living principally on the banks of rivers.

The Carolina Parrot is a native of the southern districts of the United States. Its plumage is very beautiful, the general color being a bright, yellowish, silky green, with light blue reflections.

The Alexandrine Parrakeet is found only in India and the neighboring islands. It is a beautiful bird; its general plumage is green, a vermillion collar adorns the neck; the throat and a band between the eyes are black; a mark of purple red ornaments the shoulders.

The Psittacules, or Ground Parrots, form a group of beautiful little Parrakeets, the smallest of their race. The two most prominent varieties are the Black-winged and the Phillipine, both of which are found in the East Indies.

The Rose-ringed Parrakeet is no less remarkable for its symmetrical form and graceful movements, than for its docility and imitative powers, and is supposed to have been the first bird of the Parrot kind known to the ancient Greeks and Romans, having been brought from the island of Ceylon, after the Indian expeditions of Alexander the Great. They afterwards obtained other species from Africa. The color of the bird is green, and a rose-colored band round its neck gives it the name of the Rose-ringed Parrakeet. The bill is red.

The Parrot genus includes about one hundred and seventy known species. All the species are confined to warm climates, but their range is wider than Buffon considered, when he limited them to within twenty-three degrees on each side of the equator; for they are known to extend as far south as the straits of Magellan, and are found on the shores of Van Diemen's Land. Parrots live together in families, and seldom wander to any considerable distance; these societies admit with difficulty a stranger among them, though they live in great harmony with each other. They are fond of scratching each other's heads and necks; and when they roost, nestle as closely as possible together, sometimes as many as thirty or forty sleeping in the hollow of the same tree.

THE BIRD OF PARADISE.



1 The Emerald. 2 The Siflet. 3 The Incomparable. 4 The Gloudy. 5 The Superb.

AMONG the feathered glories of creation the Birds of Paradise take the first rank. Nature has lavished upon them the most attractive graces of plumage. From the practice of the natives of New Guinea of cutting off their legs, before selling their skins to travellers, it was once believed, in Europe, that they had no feet, but flew continually in the air, and fed on morning dew.



Emerald Bird of Paradise, female.



Golden Bird of Paradise.

The Birds of Paradise are natives of New Guinea, and the adjacent islands, and consist of a number of species, but the best known is the Great, or Emerald Bird of Paradise, about the size of a Thrush. The wings are large, compared with the bird's other dimensions; the feathers of the hinder part of the breast and belly are singularly extended into bunches, longer than the body; and the tail, measuring six inches, is of equal length with it; but what chiefly attracts notice is two naked filaments, which spring from above the tail, and are two feet long, of a deep black color, bearded at the insertion and at the point, with downy feathers of a changeable hue. The female is without these floating plumes of the male. These birds are gregarious, always seen in large flocks, and perching at night upon the same tree. They live on fruits, and are said to be particularly fond of aromatics. It has a cry like that of the starling. These birds are killed by the natives with blunt arrows, and sold to the Europeans; but as this forms a lucrative kind of merchandise, the "virtuous" Chinese fabricate specimens of these celestial fowls, of the feathers of Parrots and Parrakeets, which they sell to strangers, and by which craft they make great gain.



Emerald Bird of Paradise, male.
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The Golden Bird of Paradise is another species, remarkable for the golden hued feathers of its throat, and the long, slender feathers, or filaments, which ornament its head.

The Incomparable is distinguished by a tail three times longer than the body, by a double crest on the head, and by incomparable magnificence of plumage.

The Superb Bird of Paradise is remarkable as having attached to its shoulders a long spreading plume, capable of being crected at pleasure. On its breast are two pointed lap-pets. With the exception of these, the plumage is velvet black, reflecting green and violet.

THE BIRD OF PARADISE.



Magnificent Bird of Paradise



King Bird of Paradise.

The King Bird of Paradise, one of the smallest of the group, is found in the Molueca Isles. It is very rare, and is about the size of the common Sparrow. A zone of golden green extends across its breast, and from beneath each shoulder springs a fan-like plume of six or seven dusky feathers, tipped with the richest golden green. Its tail is adorned with two long slender shafts, each elegantly terminating in a broad emerald web, disposed in a flat curl on one side of the shaft.

The Magnificent Bird of Paradise is really worthy of its name. Its hues are most brilliant. It is remarkable for a double ruff which springs from the back of its neck, and is composed of slender plumes, variously tipped with orange, yellow and black.



Emerald Bird of Paradise.



Superb Bird of Paradise.

THE LYRE BIRD.



A Parrot.



A Bird of Paradise.



A Toucan.



Lyre Birds, male and female.

NATURALISTS are greatly divided in opinion as to the proper classification of the Lyre Bird ; some placing it among the Birds of Paradise ; others among the Passerines ; and others among the Gallinaceous birds. The Lyre Bird equals a common Pheasant in size, but its limbs are longer in proportion, and its feet much larger. The head is small, the beak triangular at the base, pointed and compressed at the tip. In the male the feathers of the head are elongated into a crest ; the general plumage is dull, deep, soft, and downy. The tail is modified into a beautiful, long, plume-like ornament, representing when erect and expanded, the figure of a lyre, whence the name of Lyre Bird. This ornamental tail is, however, confined to the male. It is a bird of heavy flight, but swift of foot. On catching a glimpse of the sportsman, it runs with rapidity, aided by the wings, over logs of wood, rocks, or any obstruction to its progress ; it seldom flies into trees except to roost, and then rises only from branch to branch. They build in old hollow trunks of trees which are lying upon the ground, or in the holes of rocks ; the nest is merely formed of dried grass, or dried leaves scraped together ; the female lays from twelve to sixteen eggs, of a white color, with a few scattered light blue spots ; the young are difficult to catch, as they run with rapidity, concealing themselves among the rocks and bushes. The Lyre Bird, on descending from high trees, on which it perches, has been seen to fly some distance ; it is more often observed during the early hours of the morning and in the evening, than during the heat of the day. This bird is found in the hilly districts of Australia.

THE TURKEY.



Wild Turkeys.

THE Turkey is an inhabitant of America, and appears to have been imported into Europe about the year 1600. Its habits in a state of domestication need no description, but when wild in its native woods are rather interesting. It is partly migratory in its habits, moving from the parts about Ohio, Kentucky and Indiana, towards the Ohio and Mississippi. The march is usually performed on foot in large flocks, the birds seldom using their wings except when attacked, or in



THE DOMESTIC FOWL.



Barn-yard Scene.



Malay Fowl.



Game Cock.



Bantams, male and female.



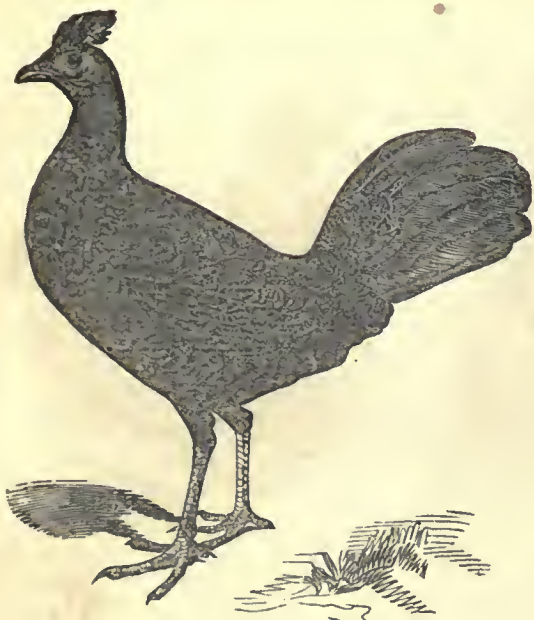
THE Domestic Fowls are too well known to need much description. There are many varieties. The Game Fowl was formerly in great request for the cruel sport of cock-fighting, an amusement which, although happily now almost extinct, was in great vogue but a few years since.

The Bantam is a very little bird indeed, but exceedingly courageous, and does not hesitate to attack a Turkey or such large birds with most amusing pompousness of manner. Some Bantams have their legs thickly covered with feathers down to the very toes.

The Dorking Fowl is a large and delicate species. The chief peculiarity in this bird is the double hind toe, so that it has five toes instead of four.

The Malay Fowl, though an awkward, bony, leggy, cowardly bird, wandering about for the first six months of its existence with scarcely a feather to cover its nakedness, is yet not so bad a fowl as it has been represented to be. But unless they are of pure breed, their flesh will be found coarse and stringy.





Fire-backed Jungle Fowl, female.



Sonnerat's Jungle Fowl, female.

The Fire-backed Jungle Fowl came originally from Sumatra. It is larger than the domestic game breed. Its head is adorned with a crest of naked shafted feathers. The general plumage is black, with gleaming steel-blue reflections. The lower part of the back is flame-color, whence its name.

Sonnerat's Jungle Fowl is a native of India, where its courage and spirit render it peculiarly attractive to cock-fighters. It is a splendid bird, and presents altogether a rich and striking object, when the sun shines upon its plumage, the hues of which are purple, and deep and golden green.



Fire-backed Jungle Fowl male.



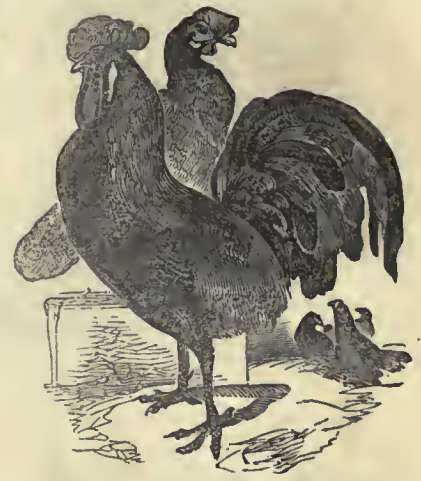
Sonnerat's Jungle Fowl, male.



Shanghai Fowl, female.



Bankiva Jungle Fowl.



Spanish Fowl.

The Shanghai fowl has become generally known in the Northern States, and especially in New England. It was brought from Shanghai, China, in 1848, by Captain Forbes, and since that time other importations of the species have been effected. Their general plumage is of a bright yellow, or gold color, variegated with dark brown and red. They are quiet tempered, their gait is proud and showy, but the legs are rather too long for beauty.

The Bankiva Jungle Fowl is supposed to be the original stock of our domestic varieties. It is a native of the East Indies. In size it is nearly twice as large as the Bantam, and is remarkable for its courage.

The Polish Fowl is a most beautiful bird, though small in comparison with many other species of the family. Its general color is a deep black, with a white tuft on the crown of the head.

The Persian Fowl is an extremely rare species. Its plumage is scanty.

The Spanish Fowls are large, showy, and possess the blackest of plumage.



Shanghai Fowl, male.
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Persian Fowl.



Polish Fowl.



Domestic Turkey.



Peacock.



Peacock.

THIS magnificent bird is originally from Asia, but has been domesticated in England for many years. Some suppose that it was first brought from India by Alexander, and by him introduced into Europe. The magnificent plumes that adorn the Peacock are not the tail, as many suppose, but the tail-coverts. The tail feathers themselves are short and rigid, and serve to keep the train expanded, as may be seen when the bird walks about in all the majesty of his expanded plumage.

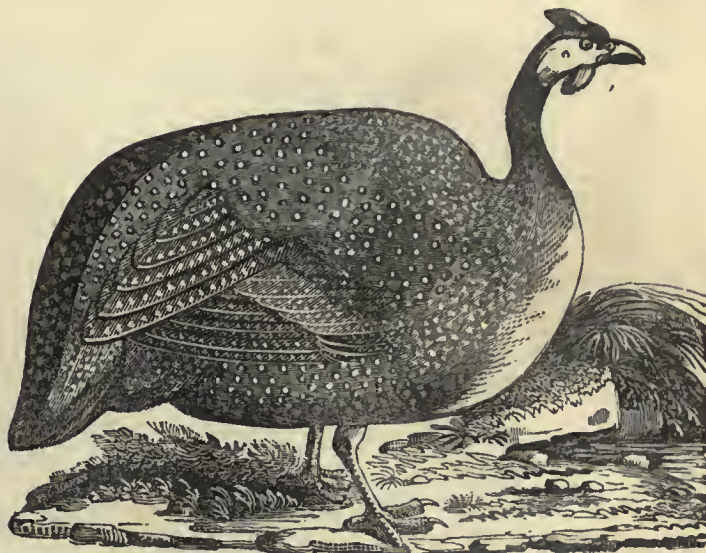
Although Pea-fowls seek their food on the ground, they invariably roost on some elevated situation, such as a high branch, or the roof of a barn, or haystack. When the bird is perched on the roof, its train lies along the thatch, and is quite invisible in the dusk.

In the times of chivalry, a roasted Peacock, still clothed in its plumage, and with its train displayed, formed one of the chief ornaments of the regal board. The nest of this bird is made of sticks and leaves rudely thrown together, and contains from twelve to fifteen eggs. The young do not attain their full plumage until the third year, and only the males possess the vivid tints and lengthened train, the female being a comparatively ordinary bird. A white variety of the Peacock is not uncommon. In this case, the eyes of the train feathers are slightly marked with a kind of a neutral tint.

THE GUINEA FOWL.



Hen and Chickens.



Guinea Fowl.



Guinea Fowl.

THE Guinea Fowl, or Pintado, was originally brought from Africa. From its peculiar cry it has gained the name of "Come-back." In its wild state it is gregarious, assembling in large flocks in some marshy situation. At night the birds roost on the trees in company, like the Turkey. It is of a restless disposition, which does not leave it in captivity, the bird frequently wandering for several miles from its home. Like the Turkey, the Pintado lays its eggs in the closest concealment it can find.

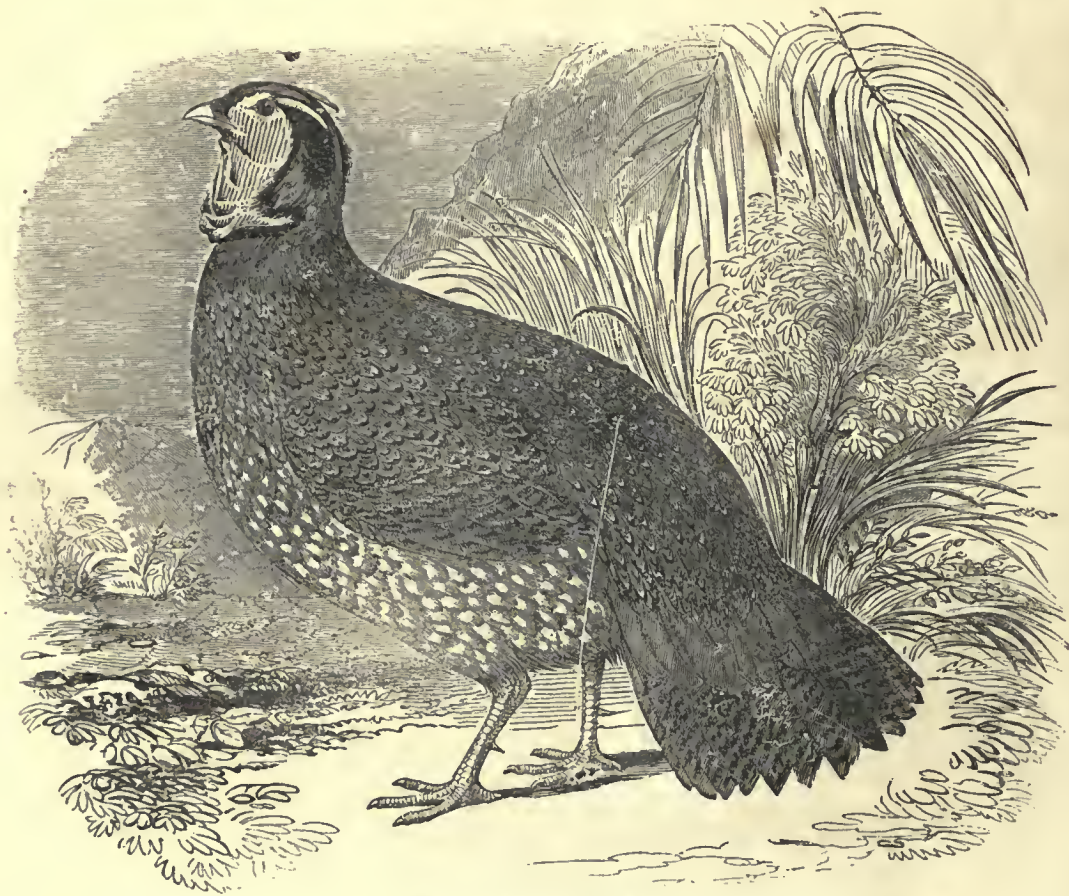


Lyre Birds.



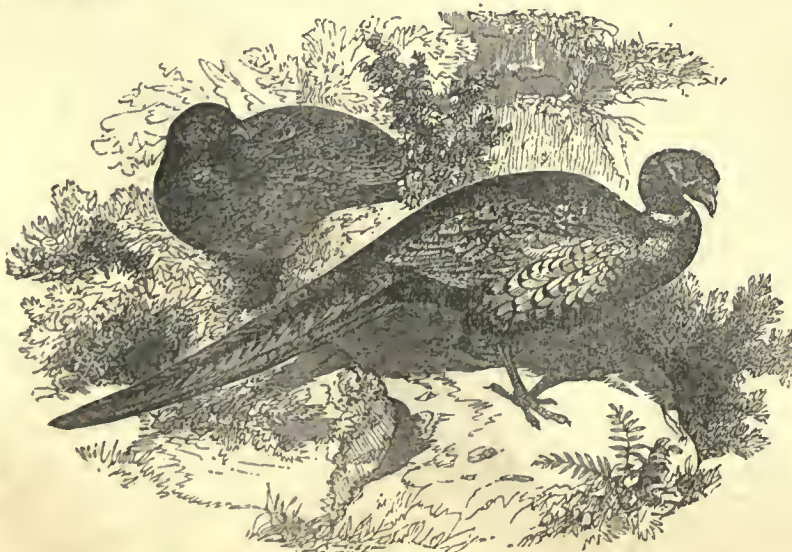
Wild Turkeys

THE PHEASANT.



Temminck's Horned Pheasant.

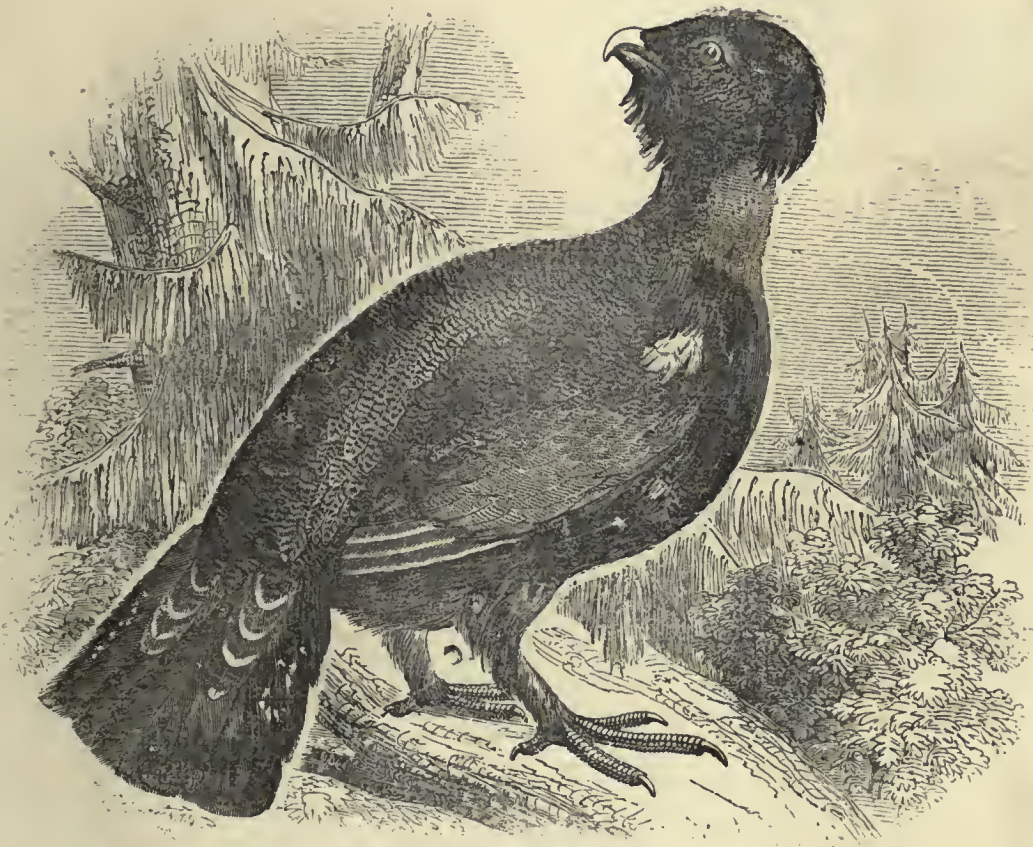
THE Common Pheasant, though originally from Mingrelia, and Georgia, is now naturalized in most parts of Europe. It is said to be common in Tartary, and some parts of China. Its introduction into Europe was ascribed by the ancients to Jason, who conducted the Argonautic expedition to Colchis, now Georgia, nine hundred and thirty-seven years before the birth of our Saviour. It is a hardy bird, and bears the cold months very well. Its nest is built on the ground, and contains from ten to eighteen eggs.



Common Pheasants.

Temminck's Horned Pheasant, is a bird as rare as it is beautiful, and is a native of China and Thibet. Of its habits and manners in a state of nature very little is accurately known. Only one living specimen has as yet been brought to Europe. Its size is between that of a common fowl and a Turkey. It derives the name of Horned Pheasant from the two fleshy horns that arise from behind the eyes.

THE GROUSE.



Cock of the Wood.

UNDER the family title of Grouse, most naturalists include not only the true bird of that name, but the Partridges, Quails, etc. With regard to the true Grouse, it is of the moor-land and heath, the barren rock and the dense pine forest, that they are respectively the tenants. The Capercaillie, or Cock of the Wood, is common in most parts of northern Europe, and was once to be found in Scotland and Ireland. The male is a large bird, almost equalling a Turkey in size, but the female is considerably smaller. In the early spring, before the snow has left the ground, this singular bird commences his celebrated "play." This play is confined to the males, and intended to give notice of their presence to the females who are in the neighborhood. During the play, the neck of the Capercaillie is stretched out, his tail is raised and spread

like a fan, his wings droop, his feathers are ruffled up, and in short he much resembles in appearance an angry Turkey-cock. He begins his play with a call something resembling *peller, peller, peller*; these sounds he repeats at some little intervals, but as he proceeds they increase in rapidity, until at last, and after perhaps the lapse of a minute or so, he makes a sort of a gulph in his throat, and finishes with sucking in, as it were, his breath. The nest is made on the ground, and contains from six to twelve eggs.



Cock of the Woods,
(257)



Ruffed Grouse

THE GROUSE.



Black Grouse, female.



Black Grouse, male.

The Black Grouse, or Black Cock, is still found on the moors of Scotland and some parts of England, and with the Red Grouse tempts innumerable sportsmen to spend their leisure on the moors.

The Red Grouse, however, has never been found on the Continent, but seems to confine itself to the heaths of Scotland, Wales and Ireland, while the Black species is abundant in almost every part of Europe.

The Ruffed Grouse is only found on the North American Continent, where it is best known as the Pheasant. The male is remarkable for producing a drumming noise, principally during the spring, but occasionally at other seasons. It is the call of the cock to his mate, and, when heard in the solitudes of the forest, has a singular effect. This noise is produced by the bird striking its wings rapidly upon some old prostrate log. By sportsman the action is called "drumming."



Ruffed Grouse, or American Pheasant



Red Grouse



Pinnated Grouse.
(258)

THE GROUSE.



Cock of the Wood.



Ruffed Grouse, drumming.



Ruffed Grouse.

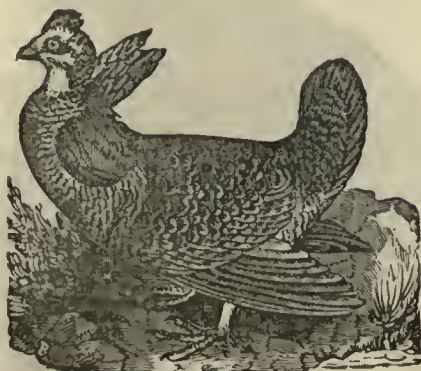


California Quail.

The Pinnated Grouse is strictly confined to portions of North America. Open dry plains, interspersed with trees, or partially overgrown with shrub-oaks are its favorite haunts. It is found from New Jersey on the east to the Columbia river on the west. The male is remarkable for a naked sac-like appendage on each side of the neck.

The California Quail is abundantly found in that portion of the United States from which it derives its name. It greatly resembles our common Partridge, or Quail, having, however, a crest on its head, which it can erect or depress at pleasure.

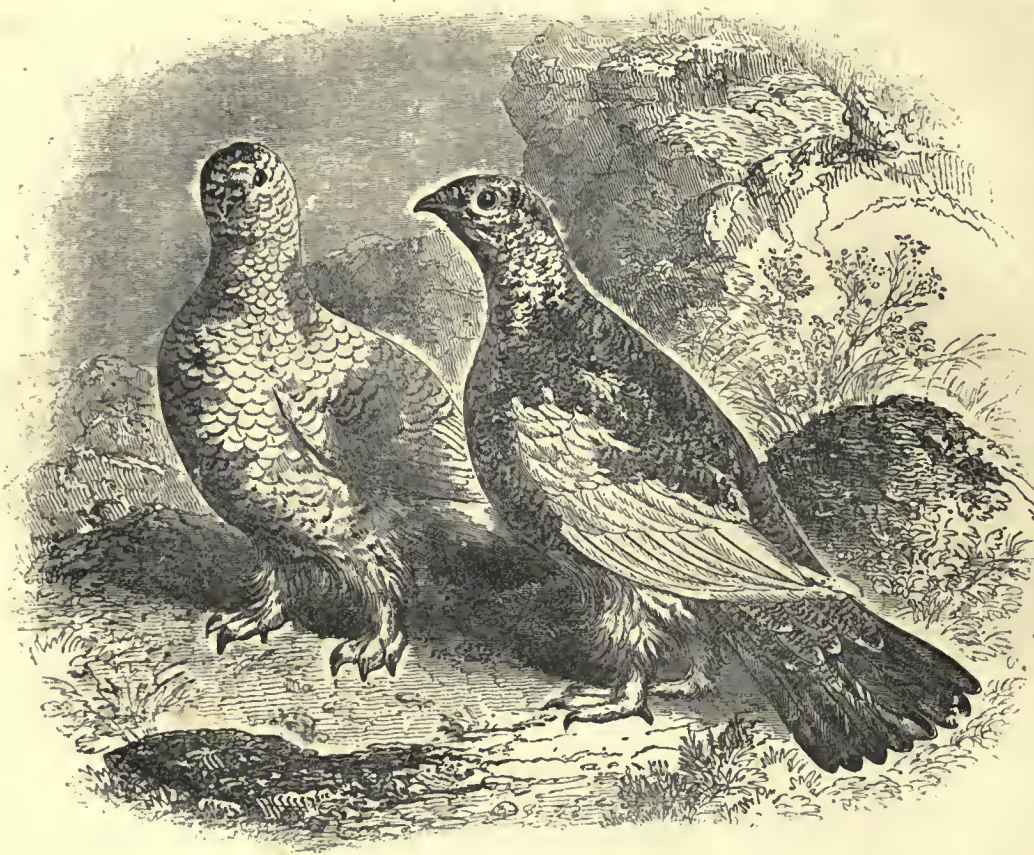
The American Partridge, which is well known from its peculiar whistle in the spring, the notes of which sound like the words "Bob White," is an inhabitant of almost every part of the North American continent. Where it is not much persecuted by sportsmen, the American Partridge becomes nearly half domesticated, and in winter approaches the barn-yard, mixing with the poultry, and there gleaning its subsistence.



Pinnated Grouse
(259)



American Partridge.



Ptarmigans.

The legs and feet of the Ptarmigan are thickly covered with hair-like feathers reaching as far as the claws. Their plumage changes in winter from a rich almost tortoise shell color to a pure white. It inhabits the northern parts of Europe and America, and is also found in the north of Scotland, principally among the mountains. Its nest is loosely constructed of twigs and grass, and contains from twelve to fourteen eggs.

The English Partridge is well known as one of the birds included in the designation of "game." It lays from fifteen to twenty eggs in a rude nest placed on the ground, and displays great attachment to them. It greatly resembles the American Partridge, but is somewhat larger.

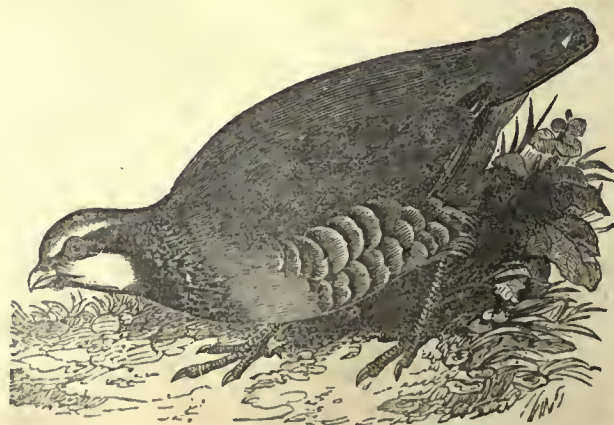
The Common Quail is a well known bird in Europe, where countless flocks of them are spread over the country.



Common Quail.



Black Grouse.



English Partridge.



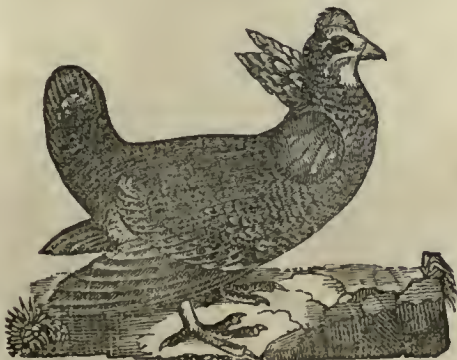
Great Bustard, female.



Great Bustard, male.

THE Bustard family of birds are distinguished for their powers of running and their shyness: some of the Asiatic species are much sought for by the Indian sportsman as a delicacy for the table. The Great Bustard is the largest of European land birds, the male being about four feet long, and measuring nine feet from tip to tip of the wings when extended, while its weight is on an average twenty-five pounds. The female is not much more than half the size of the male. There is likewise another very essential difference between the male and the female; the former being furnished with a sack or pouch, situated in the fore part of the neck, and capable of containing nearly two quarts; the entrance to it is under the tongue. This singular reservoir the bird is supposed to fill with water, as a supply in the midst of those dreary plains where it is accustomed to wander.

The Kori Bustard, of which we give an engraving of the head, is a magnificent bird, inhabiting Southern Africa, where it is accounted the best of the winged game to be found.



Pinnated Grouse.



Game Cock.



Head of Kori Bustard.



Leaden-tinted Bustard.



Black-headed Bustard.

The Black-headed Bustard is extensively spread throughout India. It is gregarious, and the male is furnished with a pouch similar to that of the Great Bustard. Its flesh is excellent.

The Leaden-tinted Bustard is a native of South Africa. Its habits and manners are those of the family generally. The length is twenty inches, and its height, when erect, is seventeen inches.

The Rhinoceros Hornbill is a native of India and the Indian Islands. The enormous bill, with its incomprehensible appendage, although of course heavy, is really much lighter than it looks, being composed of a kind of light honeycombed structure. The upper protuberance is hollow, and the only conjecture formed of its use, is that it serves as a sounding board to increase the reverberations of the air, while the bird is uttering its peculiar roaring cry.

In spite of the apparently unwieldy bill the bird is very active, and hops about the branches of trees with much ease. The appendage to the upper mandible is small when the bird is young, and only attains its enormous size when the Hornbill has reached its full growth. The bill of the Hoopoes presents a somewhat analogous peculiarity, as when the bird is young the bill is short and pointed, and increases with the size of the bird. From this circumstance, together with some other resemblances, some imagine that there is an affinity between the Hornbills and Hoopoes. The Hornbills seem to be omnivorous, fruits, eggs, birds, reptiles, &c., forming their food



The Rhinoceros Hornbill.

THE OSTRICH.



Male and female Ostrich.



Negro, riding an Ostrich.

THE Ostrich is the largest bird as yet known to exist, its height being from six to eight feet. It is an inhabitant of Africa, and from thence the elegant plumes are brought. These plumes are mostly obtained from the wings of the bird, and not from the tail as is generally imagined.

An immense number of eggs are laid by the Ostriches in one spot, several birds belonging to each nest. The eggs are very large and strong, and are in general use by the Bosjesmans for holding water. By means of these eggs, which they bury at intervals in the sand, after filling them with water, they are enabled to make inroads across the desert and retreat with security, as none can follow them for want of water. Each egg holds rather more than five pints. An excellent omelet is made by the natives, by burying the fresh egg in hot ashes, and stirring round the contents with a stick through a hole in the upper end, until thoroughly cooked.

The principal strength of the Ostrich tribe lies in the legs. These limbs are so powerful that a swift horse has great difficulty in overtaking the bird. As the Ostrich mostly runs in large curves, the hunters cut across and intercept the bird, which would in all probability escape if followed in its exact course. In running it is aided by its wings, which, however, are too short and weak to raise it from the ground.

The Ostrich is easily tamed. Many of our readers have doubtless seen the tame Ostriches at the Hippodrome, who ran races bearing riders on their backs, and really seemed to enjoy the sport as much as any of the spectators.

The food of the Ostrich is vegetable, and it swallows many stones, &c., to assist it in grinding its food. When in confinement it picks up any thing, glass, nails, &c., from the effects of which it some times dies.

Captain Cumming remarks a fact not generally known, viz. the care the Ostrich takes of its young. It has generally been supposed that after the eggs are laid, the female leaves them to be hatched in the sun, and takes no more care for them. The following anecdote would do honor to the far-famed Lapwing. "I fell in with a troop of about twelve young Ostriches, which were not much larger than Guinea Fowls. I was amused to see the mother endeavor to lead us away, exactly like a wild Duck, spreading out and drooping her wings, and throwing herself down on the ground before us, as if wounded, while the cock bird cunningly led the brood away in an opposite direction."

THE CASSOWARY. THE EMU.



Cassowaries.

THE Cassowary is a native of the eastern parts of Asia. Like the Ostrich, it cannot fly, but runs with great swiftness, and if attacked by dogs, kicks with extreme force and rapidity. The feathers of this bird are remarkable for being composed of two long, thread-like feathers, sprouting from the same root. The wing feathers are round, black, and strong, and resemble the quills of the porcupine. At the end of the last joint of the wing is a sort of claw or spur.

The Emu is a native of New Holland, and nearly equals the Ostrich in bulk, its height being between five and six feet. Its feathers lie loosely on the body, and its wings are small and hardly to be distinguished. The skin of the Emu furnishes a bright and clear oil, on which account it is eagerly sought after.

In its manners the Emu bears a close resemblance to the Ostrich. Its food appears to be wholly vegetable, consisting chiefly of fruits, roots and herbage, and it is consequently, notwithstanding its great strength, perfectly inoffensive.

The voice of the Emu is a kind of low booming sound. The eggs are six or seven in number, of a dark green color, and are much esteemed by the natives as food. When the natives take an Emu, they break its wings, a curious custom, of no perceptible utility. Young men and boys are not permitted to eat the flesh of this bird. Its flesh has been compared to coarse beef, which it resembles both in appearance and taste.

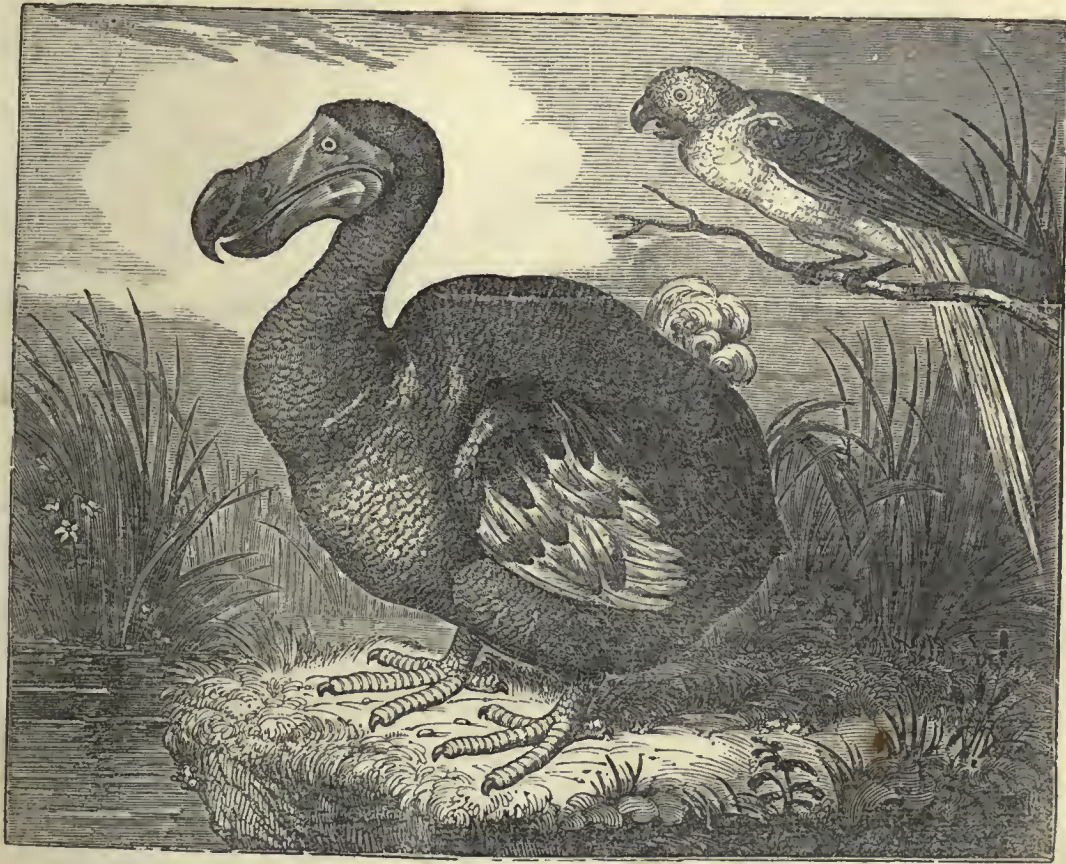


Bustard



Emu.

THE DODO.



Dodo.

THE Dodo, a singular bird, which is supposed to be extinct, was discovered by the Mauritius by the earlier voyagers. For many years their accounts of it were supposed to be mere flights of fancy. Lately, however, the discovery of several relics of this bird in various countries has set the question at rest. Not so the question of the proper position of the bird. Some think it belongs to the pigeons, and some to the ostriches.

From the travels of Sir T. Hubert, written in the year 1627, we take the following account. "The Dodo, a bird the Dutch call Walghvogel, or Dod Eersen; her body is round and fat, which occasions the slow pace, or that her corpulencie, and so great as few of them weigh less than fifty pound: meat it is with some, but better to the eye than stomach, such as only a strong appetite can vanquish. It is a melancholy visage as sensible of nature's injury in framing so massie a body to be directed by complemental wings, such indeed, as are unable to hoist her from the ground, serving only to rank her among birds."



Sending away the Carrier Dove.



Pheasant.



Dodo.

THE HUMMING BIRD.



Gould's Humming Bird, male and female.

THE Humming Birds are natives of the New World ; and rich as this continent is in the most splendid feathered beings, the brilliancy and grace of these small birds are such as to excite the highest admiration in the spectator, who at once acknowledges their pre-eminence. Recent discoveries have proved that their range of habitation is more extended than was once imagined ; for though they chiefly abound in South America, many visit the temperate and colder portions of the continent. The Ruby-throated Humming Bird passes north as far as the interior of Canada, migrating like the Swallow. Nor is this the only species which extends into a colder climate. Still, however, the central regions of the continent, and the islands adjacent, are their chief resort. There they people the woods and the gardens, glancing in the sun like meteors as they flit by with inconceivable rapidity, or, suspended on their burnished and quivering wings, explore the nectary of some scented blossom. These birds may be almost said to live upon the wing. There is no bird that equals them in power of flight.



Ruby-throated Humming Bird

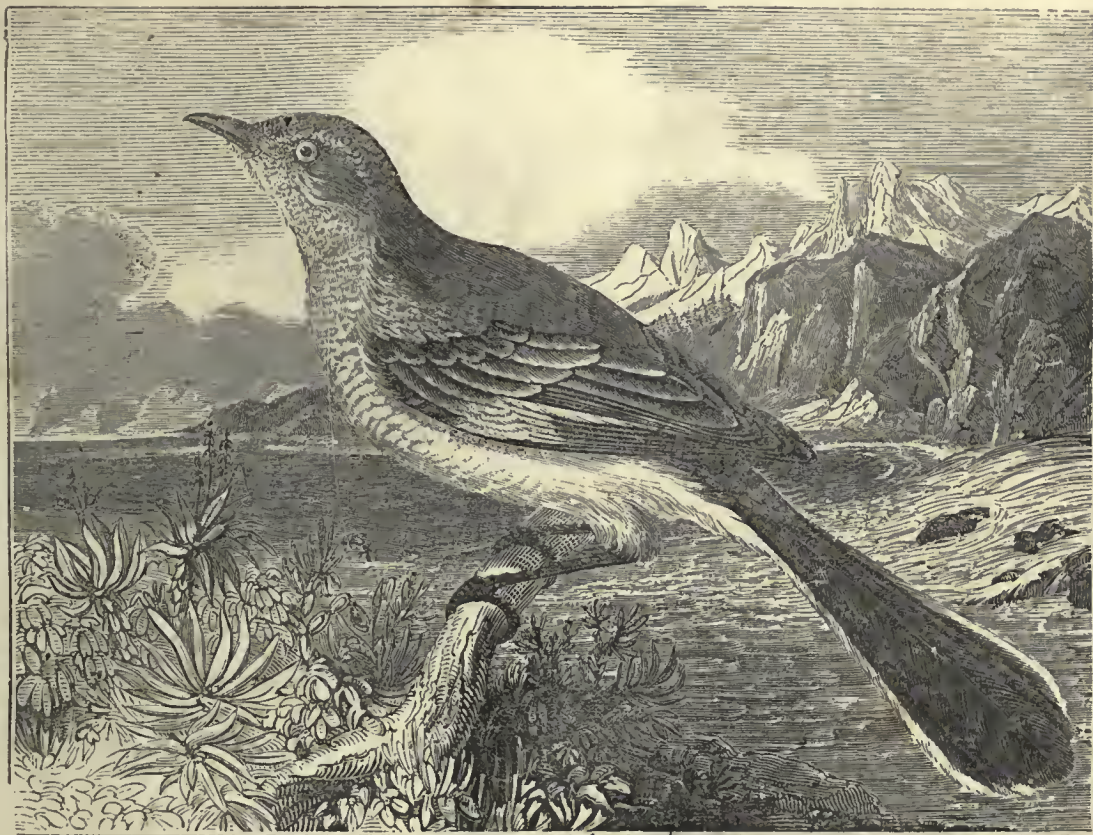


Male and female Humming Bird.



Group of Humming Birds.

THE MOCKING BIRD.



Mocking Bird.

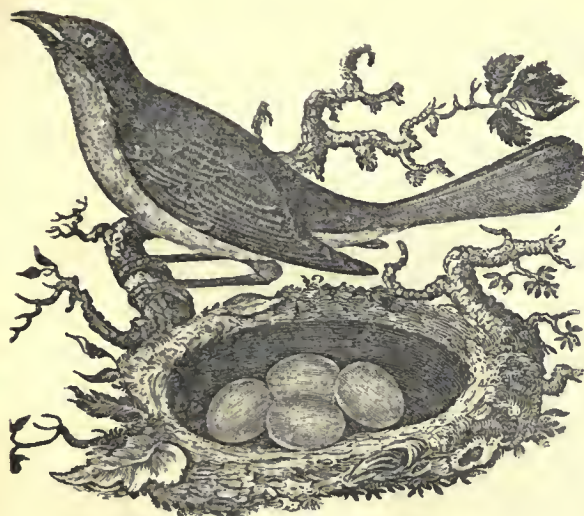
THE Mocking Bird, or Polyglot Thrush, is a native of most parts of America. This wonderful bird stands pre-eminent in power of song. Not only are its natural notes bold and spirited, but it has the faculty of imitating with deceptive fidelity every sound it hears. To its flexible organs, the harsh setting of a saw, the song of a nightingale, the creaking of a wheel, the whistled tune of a passer-by, the full and mellow notes of the thrush, the barking of a dog, the crowing of a cock, and the savage scream of the bald eagle, are each equally easy of execution, and follow one another with such marvellous rapidity that few



Mocking Bird

can believe that the insignificant brown bird before them is the sole author of these varied sounds. The Virginian Nightingale and the Canary hear their exquisite modulations performed with such superior execution, that the vanquished songsters are silent from mere mortification, while the triumphant Mocking Bird only redoubles his efforts. His expanded wings and tail glistening with white, and the buoyant gaiety of his action arresting the eye, as his song does most irresistibly the ear, he sweeps round with enthusiastic ecstacy, and mounts and descends as his song swells or dies away. He often deceives the sportsman, and sends him in search of birds that are not perhaps within miles of him, but whose notes he exactly imitates; even birds are frequently imposed upon by this admirable mimic, and are decoyed by the fancied calls of their mates, or dive into thickets at the scream of what they suppose to be the sparrow hawk.

THE CAT BIRD. THE AMERICAN ROBIN.



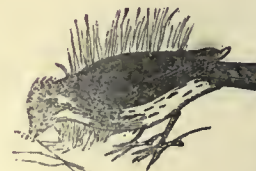
Cat Bird.



Carolina Parakeets.



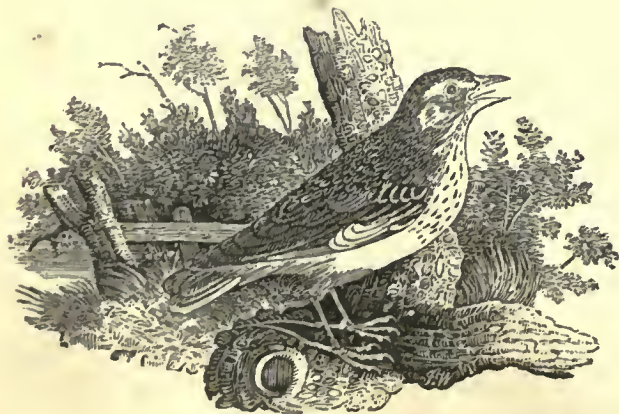
Cat Bird.



Skylark.

NEXT to the Mocking Bird, the Cat Bird is one of the most interesting of the feathered tribes of America. It passes the winter in the southern extremities of the United States, and along the coast of Mexico, from whence, as early as February, they arrive in Georgia. About the middle of April they are first seen in Pennsylvania, and at length leisurely approach New England, by the close of the first or beginning of the second week in May. They continue their migration also to Canada. The Cat Bird often tunes his cheerful song before the break of day, hopping from bush to bush, with great agility after his insect prey, while yet scarcely distinguishable amidst the dusky shadows of the dawn. The notes of different individuals vary considerably. A quaint sweetness, however, prevails in all his efforts, and his song is frequently made up of short and blended imitations of other birds.

The familiar and welcome Robin is found in summer throughout the North American continent from the desolate regions of Hudson's Bay, in the fifty-third degree to the table land of Mexico; it is likewise a denizen of the territory of Oregon, on the western base of the Rocky mountains. We listen with peculiar pleasure to the simple song of the Robin. The confidence he reposes in us by making his abode in our gardens and orchards, the frankness and innocence of his manners, besides his vocal powers to please, inspire respect and attachment even in the truant school-boy, and his exposed nest is but rarely molested. He owes, however, this immunity in no small degree to the fortunate name he bears; as the favorite Robin Redbreast, said to have covered, with a leafy shroud, the lost and wandering "babes in the wood."



Siskin.



Robin, or Migrating Thrush.



Mountain Short-Wings.



Cedar Bird.

THE Mountain Short-Wing is a native of Java, where it is chiefly found on the lowest branches of trees or on the ground. As the shortness of its wings incapacitates it for elevated or distant heights, its motions are low, short, and made with great exertion. Its song is almost uninterrupted, and pleasingly varied.

The Garrulous Roller is found in Europe. It lives on frogs, beetles, acorns, grains, and fruit. Its flesh is thought excellent. It is the size of the jay. The head, neck, and breast, are of a bluish-green, the upper part of the body reddish-brown: the flag feathers black, and the tail which is forked, has a light blue tint. It builds on trees, particularly the birch.

The Crested Curassow is a native of the forests of Mexico, Guiana, and Brazil, where it is so abundant as to be considered an unfailing source of supply to the traveller who has to trust to his gun. It is common, in a domestic state, in the Dutch settlements of Berbice, Essequibo, and Demarara. The crest consists of feathers about three inches long, curled forwards, of a velvety appearance, and capable of being raised or depressed at will.



Garrulous Roller.



Crested Curassow.



Titmouse on the Wing.



Jav.

THE WREN. THE COMMON SONG SPARROW.



Common Song Sparrow.



Short-billed Marsh Wren.

The Short-billed Marsh Wren is an amusing and not unmusical bird, found in the northern states, in May and the summer months, and in South Carolina, and Texas, through the winter. It lives in marshy meadows, builds its nest of sedge, on the ground, lays six to eight eggs. It is about four and a half inches long, of a blackish-brown color.

The Common Song Sparrow is a familiar and almost domestic bird, and is one of the most common and numerous Sparrows in the United States; it is, also, with the Blue Bird, which it seems to accompany, one of the two earliest, sweetest, and most enduring warblers: Though many pass on to the southern states at the commencement of winter, yet a few seem to brave the colds of New England, as long as the snowy waste does not conceal their last resource of nutriment. When the inundating storm at length arrives, they no longer, in the sheltering swamps, and borders of bushy streams, spend their time in gleaning an insufficient subsistence, but in the month of November, begin to retire to the warmer states; and here, on fine days, even in January, whisper forth their usual strains. As early as the 4th of March, the weather being mild, the Song Sparrow and the Blue Bird here jointly arrive, and cheer the yet dreary face of nature with their familiar songs. The latter flits restlessly through the orchard or neighboring fields; the Sparrow, more social, frequents the garden, barn-yard, or road-side in quest of support, and from the top of some humble bush, stake, or taller bough, tunes forth his cheering lay, in frequent repetitions, for half an hour or more at a time. These notes have some resemblance to parts of the Canary's

song, and are almost uninterruptedly and daily delivered, from his coming to the commencement of winter. When he first arrives, while the weather is yet doubtful and unsettled, the strain appears contemplative, and often delivered in a peculiarly low and tender whisper, which, when hearkened to for some time, will be found more than usually melodious, seeming as a sort of reverie, or innate hope of improving seasons, which are recalled with a grateful, calm, and tender delight. At the approach of winter, this vocal thrill, sounding like an Orphean farewell to the scene and season, is still more exquisite, and softened by the sadness which seems to breathe almost with sentiment, from the decaying and now silent face of nature. It builds usually on the ground, a little below the level, under a tuft of grass, or in a low bush, and occasionally in an evergreen, as the red cedar, four or five feet from the ground. Its nest is usually formed of fine, dry grass, neatly put together, and mostly lined with horse-hair. The eggs, four or five, are greenish or bluish-white, thickly spotted with one or two shades of brown.



Cereopsis



Japanese Chatterer.



Bohemian Chatterer.

THE Cedar Bird is found in the whole extent between Mexico and Canada, and, during the whole year, is a resident of the United States. "The Cedar Birds," says Wilson, "utter a feeble, lisping sound, and fly in compact bodies of from twenty to fifty; and usually alight together so close on the same tree, that one-half are frequently shot down at a time." In June, when strawberries and cherries abound, they become exceedingly fat, and are in great request by sportsmen. In the western states, at this season, they are best known as Cherry Birds.

The Bohemian Chatterer, or Wax-wing, is not confined to Europe and Asia, but is a native also of the northern regions of the American continent. It is about eight inches in length. The general plumage is dull, vinous ash, tinted with iron-red on the cheeks. The secondary quill-feathers are tipped with white, each having the shaft prolonged, and furnished with a small, horny, scarlet appendage, like a little, flattish-oval head of red sealing-wax, whence the name "wax-wing." These appendages are found on the majority of the birds which compose the family.



Cedar Bird.

The Japanese Chatterer is a newly discovered species, differing from the Bohemian and the Cedar Bird in the nakedness of the nostrils, in the length of the crest, and in the entire absence of the wax-like appendages to the wings. The Japanese Islands, as far as we know, appear to be the native territories of this bird. Of its habits we have no definite details. The crest is long, composed above of feathers of an ashy-reddish color, with an inferior layer of black plumes. The general hue of the rest of the plumage is of a brownish-ash, traversed by a red band across the wings.

THE HOOPOE.



Hoopoe.



Cuckoo.

THE Hoopoe is one of the most elegant birds that visit England. Its beautiful crest can be raised or depressed at pleasure, but is seldom displayed unless the bird is excited from some cause. Its food consists of insects, which it first batters and moulds into an oblong mass, and then swallows, with a peculiar jerk of the head. In France, Hoopoes are very common, and may be seen examining old and rotten stumps for the insects that invariably congregate in such places. There they may be seen in flocks, but they never seem to come over to England in greater numbers than one pair at a time. M. Beckstein gives a curious account of the attitude assumed by the Hoopoe on perceiving a large bird in the air. "As soon as they perceived a raven, or even a pigeon, they were on their bellies in the twinkling of an eye, their wings stretched out by the side of the head, so that the large quill feathers touched; the head leaning on the back with the bill pointing upwards. In this curious posture they might be taken for an old rag!" It lays from four to seven grey eggs in the hollow of a tree. Its length is one foot.



Wheatear.



Goldfinch.



Linnet.



Common Bunting.



Quail.



Skylark.



Goldfinch.



Pied Fly Catcher.



Ostrich.



Cardinal Grosbeak.



Iris Pheasant.



European Shrike.



Shrike.

THE Peacock Pheasant, or Iris Pheasant, is described as being one of the greatest beauties in nature. We may compare it to sable, thickly set with shining jewels of various colors. Buffon has denominated it the Eperronier, from the singular fact of its having two spurs on each leg.

The Cardinal Grosbeak, better known as the Red Bird, chiefly occupies the warmer parts of the United States, from New York to Florida. Some of the more restless wanderers occasionally, though rarely, favor New England with a visit. The song of the Cardinal is loud, mellow, and sweetly varied. Though possessed of much originality, it often consists, in part, of favorite borrowed and slightly altered phrases. When taken young, it is easily domesticated.

The Crossbill is about the size of a Lark; its general color is reddish; it occasionally visits England, but is an inhabitant of the colder climates, where it always breeds. It is said to fix its nest to a branch by the gummy matter which exudes from the pine tree, and to plaster its little abode with the same substance, so as effectually to exclude the melted snow, or rain, from the interior of its comfortable little tenement.



Blackbird.



Crossbill.



Bunting.



Mocking Bird.



Ring Ouzel.



Flicker, or Golden-winged Woodpecker.

THE Summer Yellow Bird is a very lively, unsuspicious, and familiar little creature, whose bright golden color renders it very conspicuous, as, in chase of flying insects, it darts among the blooming shrubs and orchards. It is found in almost all parts of the American continent. It is a migratory bird, ranging from the confines of the arctic circle to the tropics.

The Flicker, or Golden-winged Woodpecker, inhabits throughout North America, from Labrador to Florida. Its plumage is beautifully varied, part of the quills being of a yellow color, whence its name.

The Red-headed Woodpecker is another well-known and common American species, remarkable for the brilliant scarlet color of its head.

The Ring Ouzel is somewhat larger than the Blackbird, which it much resembles in its general habits. Its general color is dull black. The breast of the male is distinguished by a crescent of pure white, which almost surrounds the neck; on the female this crescent is much less conspicuous, and in some birds it is wholly wanting. Ring Ouzels are found in various parts of Europe, chiefly in the wilder and more mountainous districts. The female builds her nest in the same manner and in the same situations as the Blackbird, and lays four or five eggs of the same color. Their food consists of insects and berries.



Red-headed Woodpecker

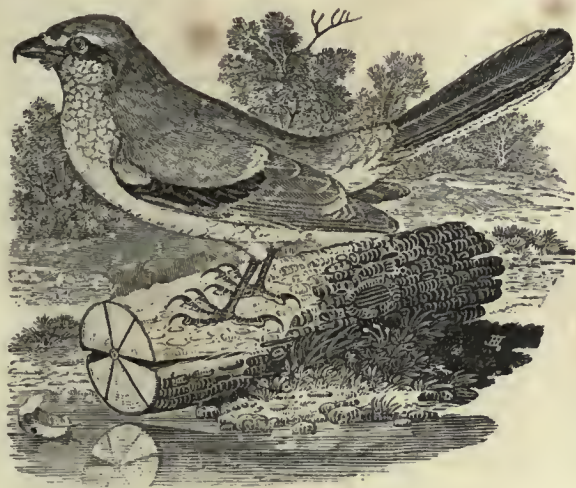


Summer Yellow Bird.



Linnet.

THE SHRIKE.



American Shrike, or Butcher Bird.



European Shrike.

THE American Shrike, or Butcher Bird, extends its wanderings as far as Natchez, and is not uncommon in Kentucky during severe winters. In March, it withdraws to the North, though some take up their summer residence in the densest forests of Pennsylvania and New England. The principal food of the species is large insects, as well as small birds, with the surplus of both of which the Shrike disposes in a very singular manner, by impaling them upon thorns. As the little American Butcher Bird, like his more common European representatives prey upon birds, these impaled insects have been supposed to be lures to attract his victims, but his courage and rapacity render such snares useless and improbable, as he has been known, with the temerity of a Falcon, to follow a bird into an open cage sooner than lose his quarry.



Feeding the Parrot.

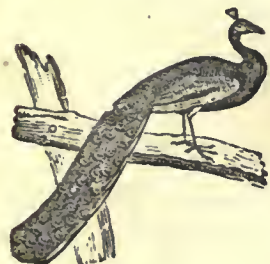


Carolina Parrot.

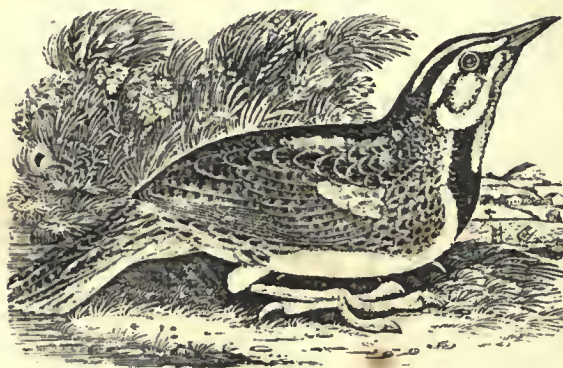
THE PIGEON. BEE-EATER. MEADOW LARK. SHORE LARK.



Bee-eater.



Peacock.



Meadow Lark.



Collared Turtle.

The Collared Turtle is a beautiful species of dove, found throughout Africa, India, and other parts of Asia. In its natural state it frequents the woods, and its habits closely agree with the common species. It has been suggested that this bird is the Turtle of the Scriptures.

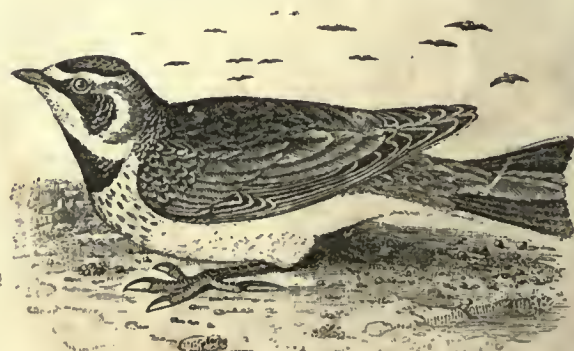
The Bee-eater is common on the Continent, but seldom visits England. In appearance it is not very unlike the Kingfisher, both in shape and in its brilliant colors. It has long been celebrated for the havoc it causes among the inhabitants of the hive, although it does not restrict itself to those insects, but pursues wasps, butterflies, &c., on the wing, with great activity. Like the Kingfisher, it lays its eggs in holes bored in banks. The eggs are white, and from four to seven in number. Its length is eleven inches.

The Meadow Lark, or American Starling, is a well-known inhabitant of meadows and fields in all parts of North America. Like the American Quail, it is sociable, and somewhat gregarious. Its flesh is white and delicate, and little inferior to that of the Partridge.

The Shore Lark is a common bird, inhabiting both the Old and the New World. It is said to sing well, rising into the air, and warbling as it ascends, in the manner of the Skylark.



Bee-eater.



Shore Lark.

THE WHIDAH FINCH. RED-WINGED BLACKBIRD. BARBET.



Visiting the Aviary—Whidah Finch.



Starling.



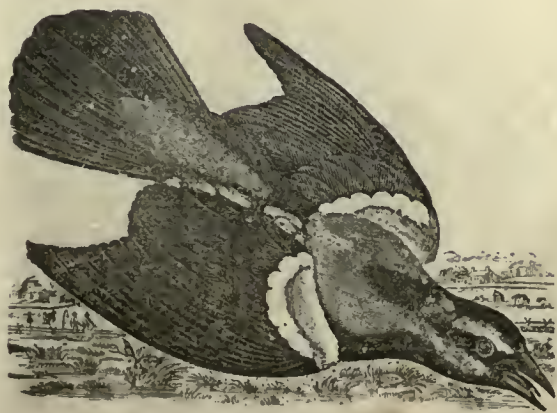
Ruffed Grouse.



Barbet.



Cardinal Grosbeak.



Red-winged Blackbird.

THE Whidah Finch is a beautiful bird inhabiting western Africa, and particularly abundant in the kingdom of Whidah, whence its name; but which has been corrupted, and is frequently written "Widow Bird." The body of the Whidah finch is generally about the size of a canary bird, but the male is remarkable for an astonishing development of plumage during their breeding season, after which its splendid tail drops off, and the sexes are then barely distinguishable.

The Red-Winged Blackbird in summer inhabits the whole of North America from Nova Scotia to Mexico. It is migratory north of Maryland, but passes the winter and summer in all the southern states.

THE GROUND ROBIN. TAILOR BIRD. CACTUS BIRD.



Ground Robin.



Bullfinch.

The Ground Robin is an inhabitant of Canada, and the United States, even to the base of the Rocky Mountains, and the peninsula of Florida, migrating, however, from the northern and middle states in October, and returning again about the middle or close of April. They pass the winter generally to the south of Pennsylvania, and are then very abundant in all the milder states in the Union. It is a very common, humble, and unsuspicious bird, dwelling commonly in thick, dark woods and their borders, flying low, and frequenting thickets near streams of water, where it spends much time in scratching up the withered leaves for worms and their larvæ.

Of the Climbing Cactus Bird little is known, save that it is an inhabitant of the tropical portions of the western hemisphere. Its name is taken from its habit of climbing the cactus plant, of the region to which it belongs, as our Woodpecker climbs trees.

The Tailor Bird is a native of Ceylon, whence its curious nest is very frequently brought. It is for the most part composed of two leaves, one of them being dead; the latter is fixed by the ingenious Bird to the living leaf as it hangs from the tree, by sewing both together, like a pouch or purse; this is open at the top, the cavity being filled with fine down; it is suspended from the branch, so as in great measure to secure it from the attacks of reptiles and monkeys.



Tailor Bird's Nest.



Nest of Tailor Bird.



Climbing Cactus Birds



Crow-Blackbird.



Golden Crested Kinglet.



Bob-o-link.



Bob-o-link.

The Crow-Blackbird is an occasional or constant resident in every part of America. The amazing numbers in which they associate are almost incredible. It is a bird easily tamed. It sings in confinement, and may be taught to speak some few words pretty plainly.

The Bob-o-link migrates over the continent of America from Labrador to Mexico, appearing in the southern extremity of the United States about the end of March. The song of the male continues, with little interruption, as long as the female is sitting, and is singular and pleasant. About the middle of August they enter New York and Pennsylvania, on their way to the south. There, along the shores of the large rivers lined with floating fields of wild rice, they find abundant subsistence, grow fat, and their flesh becomes little inferior in flavor to that of the European Ortolan; on which account the Reed or Rice-birds, as they are then called, are shot in great numbers.

The Kinglets are identical with or closely allied to the Wrens. The Golden-Crested Kinglet or Wren is supposed to be the least of all European birds; being less than three inches and a half in length, and when stripped of its feathers the body is only about an inch long. The song of the Golden Crested Wren is said to be very melodious. It is diffused throughout Europe.

The American Fiery Crowned-Kinglet is a very diminutive bird, found throughout North America and the West Indies. Though it greatly resembles the Golden-Crested Kinglet, it is undoubtedly a different species, being considerably larger. This bird derives its name from the rich flame-colored marking of the crown of its head.



American Fiery-Crowned Kinglet.



Goldfinch.

THE CROWS.



Bird's Nest.



English Jay.



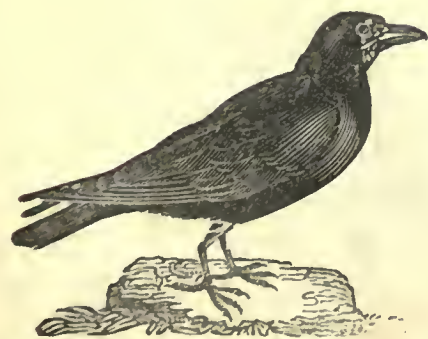
Raven.



Crow.



Toucans, roosting.



Fish Crow.

THE genus Crow contains several species; among them are reckoned the Common Crow, the Raven, the Magpie, and Jay.

The Raven, according to a classic fable, was once white; but Apollo compelled him to assume mourning as a punishment for being the bearer of some unpleasant tidings. It is frequently domesticated, and taught to utter words. It is described as possessing "many diverting and mischievous qualities; active, curious, sagacious, and impudent; by nature, a glutton; by habit, a thief; in disposition, a miser; and in practice, a rogue." Ravens live to a great age; they feed on carrion and small birds; build on high trees, or solitary eminences, and are found in almost every part of the world.

"The thievish Jay," is one of the most beautiful of British birds; its belly, breast, neck, and back, are purple tinged with gray; and the greater wing-coverts beautifully barred with black, blue, and white. Jays feed on acorns, berries, and fruit; but they do not restrict themselves entirely to a vegetable diet, as they will sometimes destroy chickens, and even carry off birds that have been caught in traps, or with bird-lime. The Jay is exceedingly restless and noisy.

The Crow, like the Raven, which it greatly resembles, is a denizen of nearly the whole world. It is a constant and troublesomely abundant resident in most of the settled districts of North America, as well as an inhabitant of the western wilds throughout the Rocky mountains, to the banks of the Oregon and the shores of the Pacific. They only retire into the forests in the breeding season, which takes place from March to May. At this time they are dispersed through the woods in pairs, and roost in the neighborhood of the spot which they have selected for their nest; and the conjugal union, once formed, continues for life.

The Fish Crow is met with as far north as the coast of New Jersey, and is common on the banks of the Oregon. It keeps apart from the common species, and instead of assembling to roost among the reeds at night, retires, towards evening, from the shores which afford it a subsistence, and perches in the neighboring woods.



Raven.



Swallow-tailed Hawk, or American Kite.

The Swallow-tailed Hawk, or American Kite, is found in the warmer latitudes of America. It lives on snakes, lizards, insects and their larvæ. It is about two feet long. It nests in tall trees, laying from four to six eggs.

The Cow-Troopial, or Cow-Blackbird, receives its name from its being so familiar around the cattle, picking up the insects which they happen to disturb, or which exist in their ordure. Like the Cuckoo, this bird never makes a nest or hatches its young. It deposits its eggs in the nest of the Fly Catcher, Yellow Bird, or Song Sparrow, or some other small bird, and leaves them to hatch the eggs, and bring up the young birds.

The Magpie is more common in Europe than in the United States, being confined in this country to the plains and table lands or steppes of the Rocky Mountains west of the Mississippi, and the north-western regions of the continent. They consequently experience annually, in the terrible vicissitudes of climate incident to the countries they inhabit, like the Esquimaux of the arctic regions, either a feast or a famine. They assailed Colonel Pike's animals, and did not await the death of the subjects they tormented, but fed upon them still living, till their flesh was raw and bleeding. They were so bold and familiar as to alight on the men's arms, and eat flesh out of their hands.



Cow-Troopial.



Magpie.



Bob-o-link.



Blue Jay.

The Blue Jay is a native of North America, considerably smaller than the European Jay, with a tail much longer in proportion: the head is handsomely crested with loose, silky plumes; bill black; legs brown; the whole bird is of a fine blue color on the upper parts, with the wings and tail marked by numerous black bars; neck encircled with a black collar; under parts blossom-color, with a slight cast of blue; tail tipped with white; legs, feet, and thighs of a dusky brown. Its note is less discordant than the European Jay but its manners are very similar. It is said to be a great destroyer of maize, or Indian corn.



Paradise Grackle.

The Paradise Grackle has been classed among the birds of Paradise; but will probably be found to constitute one of the links between them and the Crows. It is rather longer than the Blackbird; its color is chesnut-brown, the head and neck black, but the latter tinged with grey; the plumes on the fore-part of the head are fine and narrow, and behind each eye is a triangular bare space of a red color. It is a native of India, and the Philippine islands, is very voracious, and is particularly fond of locusts and grasshoppers.

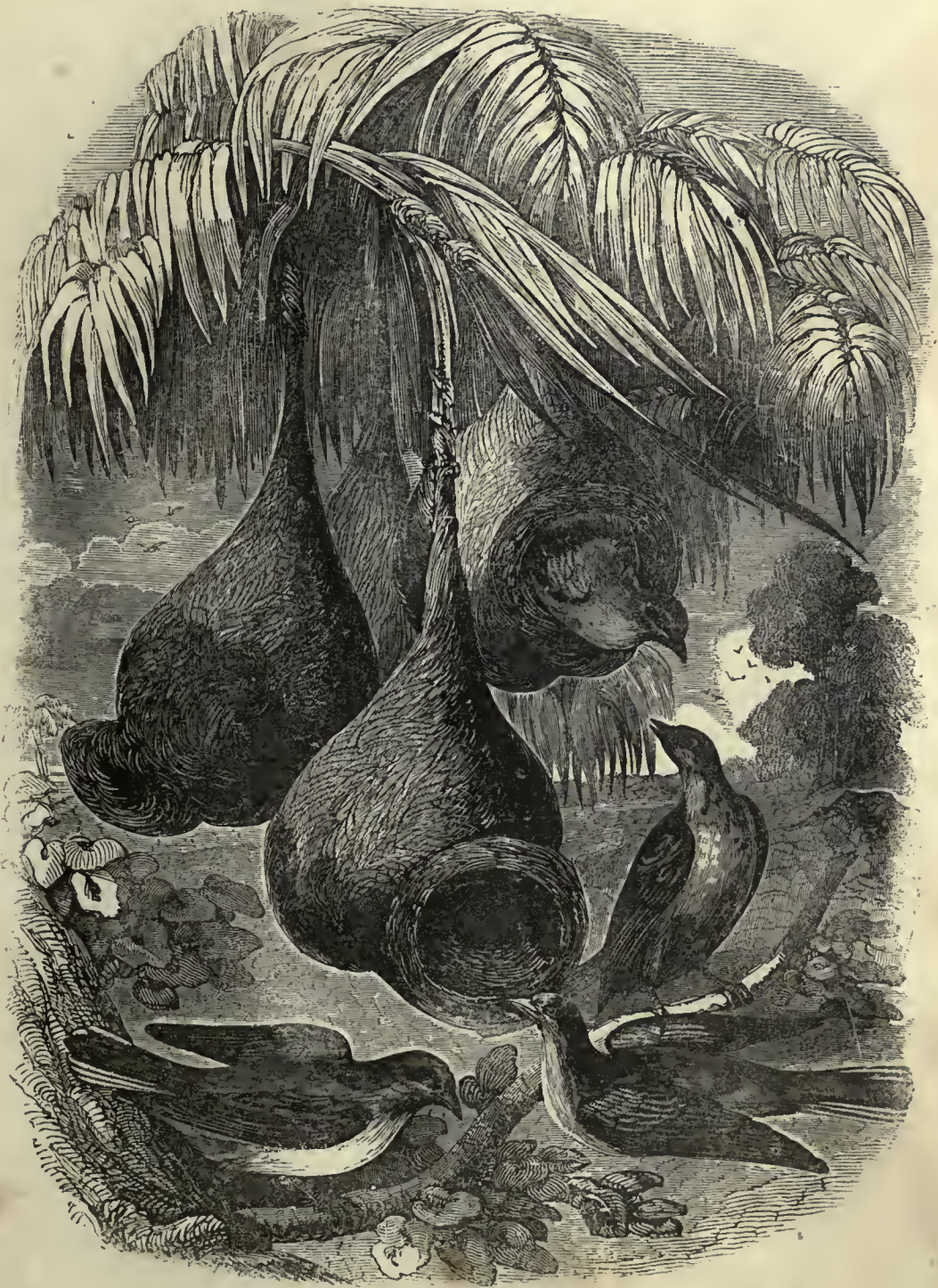


Parrot.

The Crested Grackle is of a black color, inclining to a dusky blue; but the bottom of some of the first quills are white, which forms a white spot in each wing. On the forehead, just at the base of the bill, is a tuft of feathers, which it can erect at pleasure in form of a crest. It is a native of China.



Hoopoe



Pensile Nests of a species of Weaver Bird.

THESE nests hanging to the extremity of the leaves of a palm, are most probably the workmanship of a species of Weaver-Bird, but which we will not attempt to identify. Most, if not all, of the Weaver-Birds form colonies, and hang their nests in clusters from the twigs of trees and long leaves of different kinds of palms.



Group of Trogons.

THE Trogons constitute a family of birds which are to be found only in the hotter parts of India and America. In our engraving, on the topmost branch, are perched a pair, male and female, of the Resplendent Trogons, which is found in the dense forests of southern Mexico. The middle bird, on the left, is the Pavonine Trogon, a native of South America. The lower figure, on the left, is Piard's Trogon, which belongs to India; and that on the right, is the Trogon Jemmarus, an inhabitant of Cuba. The Trogon is a solitary bird, and early in the morning, or late in the afternoon, may be observed sitting, singly or in pairs upon the trees, with tails outspread and drooping, watching for insects.

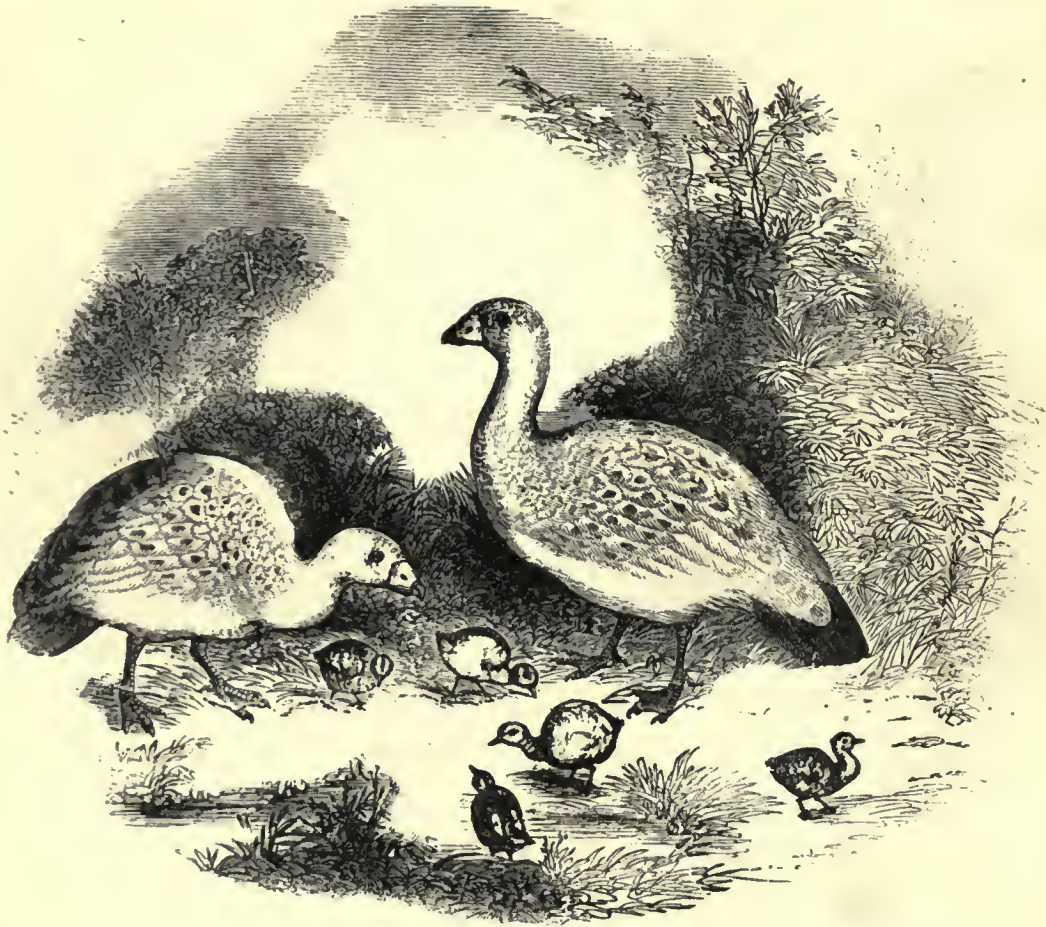


The Chaja and its young.

THE Chaja, or Crested Screamer, which is figured in the cut above, is destitute of the long, slender horn on the head, but has the back of the head ornamented with narrow, dishevelled feathers, two inches and a half in length; the beginning of this plume is between the eye and the beak, so that the crest encircles the head like a diadem, and hangs down behind. The general clothing of the head and neck consists of down, with the exception of a naked band towards the lower part of the latter; this down is of a pale lead-color, the naked collar is flesh-color, and below it is a collar of black down; the general plumage is of a whitish-grey, the wings and tail being blackish-brown. Length of bird thirty-one inches. It is found in Paraguay.

The Chaja lives singly or in pairs, but is sometimes seen in flocks; it frequents morasses, and the low, marshy borders of rivers; it does not swim, but wades in quest of aquatic and other plants, on which alone it feeds. Azara observes that he has seen Chajas brought up from the nest in various houses in the country, and that they were as domesticated as the poultry. The same writer also informs us that the Chaja perches on the tops of the loftiest trees; on the ground it walks with the body horizontal, the head and neck raised vertically, the beak being kept rather down. Its cry is loud and shrill, and is uttered not only during the day, but the night also; that of the male is represented by the word Chaja, that of the female Chajali, and they respond to each other's call. The wings are armed with double spurs, which, with the diadem-like crest, the size, the stately air and astounding cry of the bird, might lead to the idea of its being a bird of prey; whereas it is gentle and quiet. Its length of wing enables it to fly well, and it has an apparatus of extensive air cells between the skin and the muscles of the body, which are even continued down the legs to the toes. Like the vulture it wheels around in vast circles, and often rises till entirely out of sight.

THE CEREOPSIS.



The Cereopsis.

THE Cereopsis is a native of New Holland; and though most voyagers who have visited the distant shores on which it abounds have alluded to it as a species of swan, or as a goose, it is only within the last few years that naturalists at home have gained an accurate knowledge of its true characters and its natural affinities.

The habits of the Cereopsis, in a state of nature, have been succinctly detailed by various voyagers. Most probably it is migratory, at least to a certain extent; for Captain Flinders found it more abundant on Goose Island in some seasons than in others. It frequents grassy districts and the shore, but rarely takes to the water, its food being exclusively grass. Both at Lucky Bay and Goose Island these birds were very abundant, and so tame that the crew of Captain Flinders had no difficulty in knocking them down with sticks, or even in taking them alive. M. Bailly reports to the same effect respecting those seen by him at Preservation Island; and Labillardiere says, that at first they were so little alarmed by the presence of man, as to suffer themselves to be taken by the hand; but in a short time they became aware of their danger, and took to flight on the approach of any one. All agree as to the delicacy of its flesh. From the ease with which the Cereopsis becomes domesticated, we are not without hope of seeing this bird added to the list of those which enliven our farm-yards, and contribute to the luxuries of our table. It breeds freely in our climate, feeds like the goose, but is even more familiar; and requires only that ordinary attention which is always paid to domesticated ducks, geese, and poultry. Its voice is deep, hoarse, and clanging; short, but inflected. Its food is entirely vegetable; a short, stout bill is requisite for plucking it up from the ground. In size this beautiful species equals the common goose; but its bill, as we have said, is shorter, being very thick at the base, and somewhat arched above. The top of the head is pale grey, the rest of the plumage is slate grey.



Ardea Herodias, or American Bittern.



Bittern.

THE family of Herons is very extensive, and embraces not only the true Herons and Bitterns, but also the Storks and Bratbills. As a general rule, they frequent the margins of rivers, or lakes, or marshes, feeding on fish, reptiles, and even small mammalia.

The Common Heron is spread over the greater part of Asia and Africa, as well as Europe. In America it is represented by an allied species, *Ardea Herodias*.

The Night Heron is found in most parts of the Old World. In many respects it resembles the Common Heron in its habits, breeding, like that bird, in society, on the topmost branches of trees, and roosting during the day in the recesses of woods adjacent to wild swamps and rivers, which it visits, on the approach of night, in quest of prey.

The Bittern is found in Europe, Asia, and Africa, and was once common in England, when, in the palmy days of falconry, it was eagerly hunted with the hawk.



Night Heron.



Heron.



Common Heron.



Adjutant.



Boatbill.

The Adjutant is a native of the East Indies; it measures seven feet and a half from the top of the beak to the claws; it has a very large beak, and a drooping crop of considerable dimensions. Its courage is not equal to its voracity; for a child of eight or ten years old soon puts it to flight with a switch; though, at first, it seems to stand upon its defence, by threatening with its enormous bill widely extended, and crying out with a loud, hoarse voice, like a bear or a tiger. It is an enemy to small quadrupeds, as well as birds and reptiles, and destroys fowls and chickens, though it dare not attack a hen, with her young openly; it preys also on rats, young kittens, and the like, and has been known to swallow a cat whole; a bone of a shin of beef being broken asunder, serves it but for two morsels.

Dr. Latham observes that these birds in their wild state live in companies, and when seen at a distance, near the mouths of rivers, coming towards an observer, which they often do with their wings extended, may well be taken for canoes upon the surface of a smooth sea; when on the sand-banks, for men and women picking up shell-fish or other things on the beach.



Green Heron.

The form of the beak of the Boatbill is very peculiar; it is broad, depressed, and sharp at the point. The Boatbill is an inhabitant of South America; it is about the size of a Crow; the tail and part of the back are of an ash-color; the under parts of the body are white, and the residue of the plumage is black.



Adjutant.



Bittern.



Heron.



Stork.

The Stork is extensively found throughout Europe, Asia, and Africa. In Holland, Storks are very abundant, and are encouraged by the Dutch to build in their towns. In Holland a kind of false chimney is built by the inhabitants for these birds to make their nests in. When the Stork cannot find a building on which to make its nest, it chooses the flat spreading branches of a cedar or pine, and there collects a large mass of sticks and twigs, on which it lays from three to five whitish eggs. When disturbed, the birds make a great clattering with their bills. Its food consists of rats, mice, frogs, &c., and it is for the benefits it confers upon man by devouring these vermin that it is so carefully protected and encouraged, especially in the East, where the inhabitants do not trouble themselves by removing carrion or offal, but leave that office to the vultures, hyenas, and other scavengers of nature. The height of the Stork is nearly four feet. In their migrations these birds avoid the extremes of heat and cold; never being seen in summer farther north than Russia or Sweden, nor in winter farther south than Egypt.

Among the ancients, to kill a Stork was considered a crime, which, in some places, was punished even with death; and, like the Ibis, this bird became the object of worship. It is remarkable for its great affection towards its young, but more especially for its attention to its parents in old age.



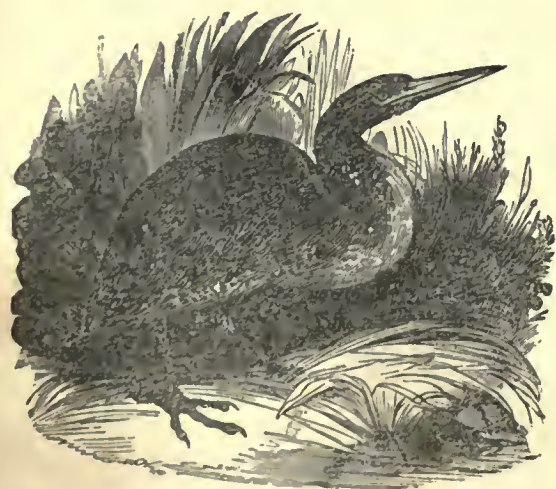
The Adjutant.



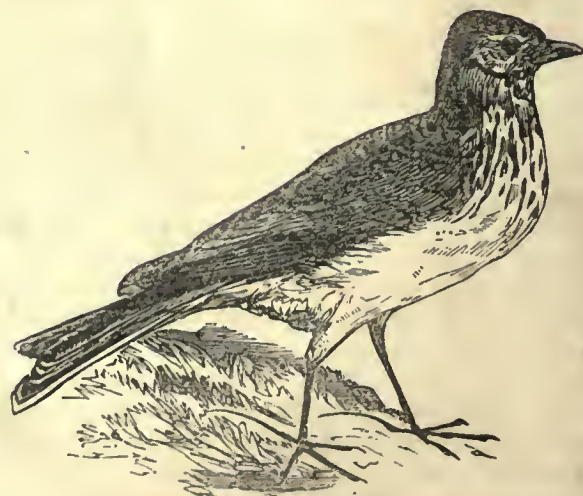
The Cariama.

THE Cariama is considered to be related to the waders, the gallinaceous birds and the Ostriches. It is found in the mountain-plains of Brazil. It lives on lizards, insects, molluscous animals, and seeds. It is difficult to catch, running with such swiftness as to distance a fleet horse. When caught, it is easily domesticated. It lays two eggs, in a nest built of sticks.

The Tiger Bittern is a native of Guiana. It is about thirty inches long. It lives in savannahs, frequenting occasionally the banks of rivers. It resembles the common Bittern in appearance and voice. It builds its nest upon the ground, and lays seven or eight roundish eggs.



The Tiger Bittern.



The Skylark.



Great Flamingoes.

In the Flamingoes the legs are of excessive length. Their wings are small, and their toes partly webbed. They are waders in their habits, but occasionally swim when beyond their depth. They frequent low muddy coasts, salt marshes, and the mouths of rivers, bidding defiance to the pestilent exhalations that drive man far from their haunts.



Spoonbill.



Little Flamingo.

The Great Flamingo is an inhabitant of the warmer parts of Europe, and, with the Little Flamingo, is common in Asia and the coasts of Africa. The singularly shaped beak of this splendid bird is peculiarly adapted to its long and flexible neck. When the bird wishes to feed, it merely stoops its head to the water; the upper mandible is then lowest, and is well fitted to receive the nutritive substances which are entangled in a filter placed on the edges of the beak. The color of their plumage is a deep brilliant scarlet, except the quill feathers, which are black. When a flock of these birds stand ranged in a line, according to their custom, they present the appearance of a small and well-drilled body of soldiers, but are far more dangerous to approach than the most formidable army, for the miasma of the marshes has a more deadly aim than the rifle, and its breath is more certainly fatal than the bullet. The nest of the Flamingo is a curious, conical structure of mud, with a cavity at the summit, in which are placed two or three whitish eggs. When the female bird sits on the nest, her feet rest on the ground, or hang into the water. The height of the bird is between five and six feet.



Great Flamingo, feeding.

The Common Spoonbill is found in Europe, Asia, and Africa, and frequents Holland, together with the Stork. The strange shape of the tip of its beak has gained it the name of Spoonbill. It feeds on worms, snails, and water plants, searching for the latter by agitating the water with its broad beak.

The nest of the White Spoonbill is sometimes placed in trees, and sometimes amid rushes. It contains three whitish eggs, slightly spotted with red. The length of the bird is not quite three feet.



Woodlark.



Canary Bird.

FRIGATE PELICAN.



White Pelican.



White Pelican.



Frigate Pelican.

The Frigate Pelican, or Man-of-War Bird, is usually found between the tropics. Although when stripped of its feathers it is hardly larger than a pigeon, yet no man can touch at the same time the tips of its extended wings. The long wing bones are exceedingly light, and the whole apparatus of air-cells is extremely developed, so that its real weight is very trifling. It flies at a great height above the water, and from that elevation pounces down on fish, especially the poor persecuted flying-fish. According to some authors, the name of Man-of-War Bird was given to it because its appearance was said to foretell the coming of a ship; probably because the Frigate Pelican and ships are equally averse to storms, and both like to come into harbor if the weather threatens. Under the throat of the Frigate Pelican is a large pouch of a deep red color, which can be distended with air at the pleasure of the Bird. The pouch is larger and of a mere brilliant red in the male than in his consort, and the general plumage of the female is not so bright as that of the male.

Although its swiftness of wing and general activity enable it to snatch a fish from the surface of the water, or to pounce upon the flying-fish before it can again seek the protection of its native element, yet it too often uses its powers in robbing other birds of their lawful prey. It is enabled in some mysterious way to find its way home by night, even though it may be four or five hundred miles from land. The length of the male bird is three feet, and the expanse of wing eight feet.



Tame Goose.

(2993)



Coet.



Tame Duck.



Booby.

THE WHITE PELICAN.



White Pelicans.

THE White Pelican inhabits Africa, India, and great part of the south-eastern portions of Europe. It is a very conspicuous bird, its singular membranous pouch offering a distinction perfectly unmistakable. The pouch, when distended holds two gallons of water, but the bird has the power of contracting it so that it is scarcely to be discerned. The pouch also serves as a net, in which to scoop up the fish on which the Pelican feeds. Another most important use of the pouch is to convey food to the young. The parent Pelican presses its pouch against its breast, in order to enable the young to obtain the fish, which action, in all probability, gave rise to the fable of the Pelican feeding its young with its own blood. The red tip of the bill probably aided the deception.

Although a web-footed bird, the Pelican, like the cormorant, can perch on trees, although it prefers sitting on rocks. The color of this bird is a pure white, with a very slight tinge of rose color, and the pouch is yellow. The length of the bird is nearly six feet.

In America, Pelicans are found in the North Pacific, on the coast of California and New Albion; and from the Antilles and Terra Firma, the Isthmus of Panama and the bay of Campeachy, as far as Louisiana, and Missouri. They are very rarely seen along the coast of the Atlantic, but stragglers have been killed in the Delaware, and they are known to breed in Florida.



White Pelican



American Avouet.



Great Marbled Godwit.

THE Turnstone is common in the whole northern hemisphere, as well as Africa and Cayenne. It receives its name from turning over stones in search of worms and insects, a practice which it retains when domesticated. It is about ten inches and a half long.

The Green Heron, known by a contemptible and disgusting name, is a common and familiar species of Bittern in the United States. He frequents swamps. He is sluggish and not shy. He eats frogs and fishes. His picture is on another page.

The Great Marbled Godwit is only a transient visitor along the sea coasts of the United States in spring and fall. In summer it lives on worms and leeches, in the far northern regions. It is nineteen inches in length. Its bill is curved upwards. Its color is dusky brown.

The Willet or Semi-palmated Snipe is found on all parts of the coast of the United States and the north of Europe. It passes the winter within the tropics. It is much sought for by sportsmen, being tender, fat, fine-flavored game.

The American Avouet, supposed to winter in tropical America, comes to the middle states, in May. It frequents shallow lakes, feeding on insects and fresh water crustacea. In breeding time they are noisy and clamorous.



Willet.



Turnstone, or Sea Dotterel.



Wood Ibis.



Bay or Glossy Ibis.

Species of the Ibis inhabit all quarters of the globe. He frequents the borders of rivers and lakes, feeding on insects crustacea and worms as well as vegetables. They are waders.

The Wood Ibis is found in Florida and the other southern states. They are solitary, indolent birds, sitting on the topmost limb of some tall cypress, till hunger compels them to seek their prey. The Scarlet Ibis is found in the West Indies and Brazil. It is very beautiful. The Bay or Glossy Ibis is found nearly all over the world. In Egypt, in common with the sacred Ibis, it was once revered and embalmed in the vast catacombs of Memphis and Saccara.

The Long Billed Curlew is found on the shores of the southern and middle states. They fly high and rapidly, the flock arraying itself in a wedge like wild geese. Their note sounds like the word *Curlew*. By imitating its sound, sportsmen draw them within gun-shot. They live on insects, worms, and small crabs. The young and old, also, on their arrival from the north, where they feed on various kind of berries, still continue their fondness for this kind of food, and now frequent the uplands and pastures in quest of the fruit of the hramble, particularly dew-berries, on which they get so remarkably fat, at times, as to burst the skin in falling to the ground, and are then very superior in flavor.



Long billed Curlew.



Ruff.



Whooping Crane.



Black-necked Stilt.

The Sanderling Plover is found in the United States. They breed in the remote regions of the north, making a rude nest of grass, laying four eggs, in June. In August, they migrate to the South. They are found on the beaches, in New Jersey, during part of the winter, in flocks, running about and feeding on small shell-fish and marine insects.

The Common, or Golden Plover, is, according to the season of the year, met with in almost every part of the world, breeding in the northern regions in summer, and migrating to the south in winter. On the coast of the United States, they are caught by means of the clap-net. Their flesh is highly esteemed.

The Black-necked Stilt is common in North and South America. They are waders, living on larvæ, spawn, flies and other insects, and frequenting salt marshes and shallow pools on the sea-board.

The Whooping Crane, the largest of American birds, is upwards of four feet long, and stands five feet in height. Its wing and tail feathers resemble those of the ostrich. Its whoop is like that of an Indian. It frequents the sea-shore, wandering along marshes and muddy flats, in quest of reptiles, fish and marine worms.



Sanderling Plover.



The Common, or Golden Plover.



Douglas's Stilt Sandpiper.



Yellow-Shanks Tatler.

The Dunlin or Redbacked Sandpiper of the United States is found, according to the seasons of the year, throughout the northern hemisphere and in the southern hemisphere to the Cape of Good Hope. They frequent muddy flats feeding on worms and small shell-fish. They are seen running about with great activity. They are shot in great numbers by sportsmen. They are about eight inches long.

Douglas's Stilt Sandpiper is found in the northern part of America, frequenting interior marshes in the breeding season, and in the autumn resorting in flocks to the flat shores of Hudson's Bay, before migrating to the south. It is ten inches long, of a blackish-brown color and a wader.

Wilson's Sandpiper is found in the western as well as the eastern shores of our continent. Our sportsmen call them *Peeps*. They are six or seven inches long, fat and well flavored. They feed partly on vegetable substances and partly on worms and shell-fish.

The Yellow-Shanks Tatler is very common on our sea-beaches and marshes. He is about ten inches long. He has a sharp whistling note which he repeats when alarmed. He lives on worms and insects and his flesh is excellent. In the latter end of summer this bird is abundantly supplied to the markets of Boston, New York, Philadelphia and Baltimore. Mr. Wilson says though these birds do not often penetrate far inland, yet, on the 5th of September, I shot several dozens of them in the meadows of Schuylkill, below Philadelphia. There had been a violent north-east storm a day or two previous, and a large flock of these, accompanied by several species of *Tringa*, and vast numbers of the Short-tailed Tern, appeared at once among the meadows. As a bird for the table, the Yellow-Shanks, when fat, is in considerable repute. Its chief residence is in the vicinity of the sea, where there are extensive mud-flats. It has a sharp whistle, of three or four notes, when about to take wing and when flying. These birds may be shot down with great facility, if the sportsmen, after the first discharge, will only lie close and permit the wounded birds to flutter without picking them up; the flock will generally make a circuit, and alight repeatedly, until the greater part of them be shot down.



Dublin or Ox-bird



Wilson's Sandpiper.



1. The Curlew.

2. The Godwit.

3. The Purre, or Stint.

The Curlew depicted in the wood-cut is the most common in England, known in some parts as the Whaup. It is in length about two feet and a half, and is distinguished by its long bluish legs and extended bill. The latter is of a dusky black color, and about seven inches in length. The pervading color of this bird is a pale brown, but the breast and lower part of the back are white, the former marked with oblong black spots, the latter with a few spots of a dusky color. The quills are black, spotted on the inner web with white. In the breeding season, when they reside on the moors, they are not gregarious, but when they migrate to the sea-shore they congregate in large numbers, and may be observed following one another in a long line as they wade along the sand, picking up small crabs, worms, &c.

The Godwit is much smaller than the curlew, being in length about sixteen inches. This bird perhaps exceeds the curlew in timidity, and when in the summer it resorts to the fens, it seldom remains above a day or two in the same place.

The Purre belongs to the family of Sandpipers. It is one of the wading tribe, being only about seven or seven and a half inches in length. This bird may be seen on the coast nearly all the year round, though in the summer they are not so numerous, and for a short period (about July) appear all to have departed. It is probable that, like the other birds we have noticed, it retires at this season to breed. But whither they direct their flight has not yet been ascertained.



The Ruff and the Reeve.

The Ruff, thus denominated from a spreading tuft of feathers on each side of the head in the male, is subject to great variety in the colors of its plumage, but the prevailing ground color is brown, inclining to ash, with lateral and under covers white. He is so pugnacious, that Linnaeus conferred on him the surname of the "warlike." Previously to pairing, their contests are frequent and mortal. The females, who are called Reeves, are smaller than the males and want the ruff. They nestle in tufts of grass, in fens, and have four eggs, white, marked with rusty spots. Even in confinement they discover their untameable animosity, nor is it till they are fairly matched that they become peaceable and sedate. The Ruff weighs seven ounces, and is in length a foot.



Barnacle Goose



Egyptian Goose.



Foolish Guillemot.



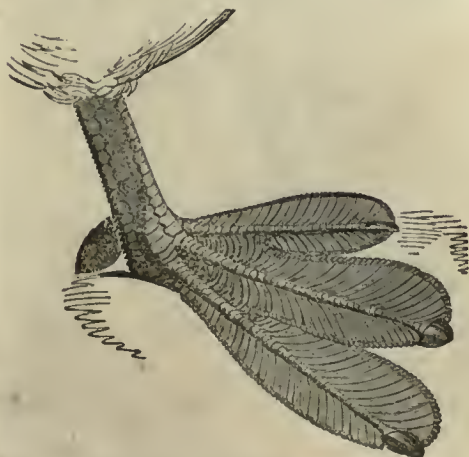
Frigate Pelican.
(300)



Little Grebe, or Dabchick.

Crested Grebe, or Gaunt. The length of this bird is from twenty three inches to two feet. It inhabits the northern parts of both continents, and feeds on fish, marine worms, and in part on vegetables.

Little Grebe, or Dabchick. This bird is the smallest of the species it belongs to, some being only ten inches long. It is common to the colder regions of both continents, though as yet unknown within the United States. It is found in lakes and sluggish rivers, which are well supplied with the shelter of reeds. It rarely takes wing, but, on the least alarm, dives and remains under water with its bill alone above the surface for respiration. Its eggs, five or six in number, somewhat less in size than a pigeon's, are deposited in a coarsely made nest. The foot of the Grebe is not webbed like that of most water birds, but each toe is separate and flattened, so as to serve as a separate paddle.



Foot of the Male Grebe.



Little Grebe, or Dabchick.



Bartram's Tatler.



Woodcock.

The Peetweet, one of the commonest of the marsh birds of the Middle and Eastern States, comes from Mexico and the West Indies north about the first of May, and breeds in the former regions as far as the St. Lawrence. They are seen flying in flocks along the margins of tide-water streams in search of their usual food, worms, insects and small shrimps. They are named from their wonted plaintive cry.

Bartram's Tatler is twelve or thirteen inches long. It is found, according to the season all over our continent, retiring for the winter to the far south, and returning north from early May onward. These birds are considered delicious game.

The American Woodcock differs little in appearance or habits from the European. The female is thirteen and a half inches from point of bill to tip of tail, and the male twelve inches. The bill is very long and so exquisitely sensitive at the tip, that the bird can determine what it is feeding upon without seeing it. It winters in countries south of the United States, and comes northward in early March, but goes no further north than the St. Lawrence, breeding in all the intermediate regions. It feeds on aquatic worms, larvæ, and glutinous roots, and its flesh is very highly prized.

The Soree, or Common Rail, winters in the marshes of Georgia till the close of February, and on the first of May is seen in the watery meadows below Philadelphia. They breed in the remote fur countries of the north. Their favorite haunts are reedy marshes, lagoons, and river-borders, where they procure their favorite food, the wild rice plant. From the middle of September to that of October, having returned to the middle states with their new broods, they are in a prime condition for the table.



Spotted Tatler or Peetweet.

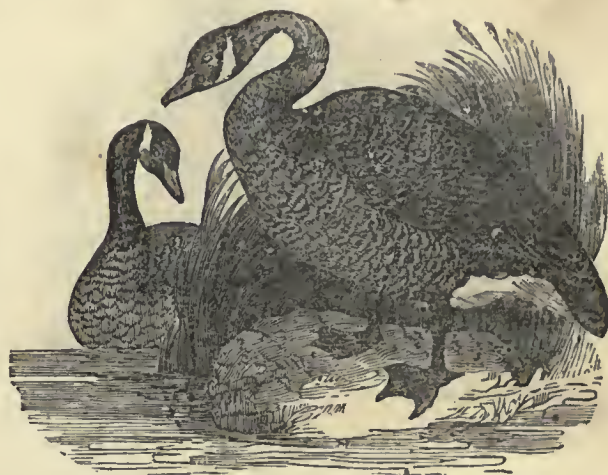


Rail.

WATER BIRDS.



Wild, or Whistling Swan.



Black Swan.

The Whistling Swan, or Hooper, resides during summer within the arctic circle, but in winter visits the northern parts of Europe, including England. It migrates in flocks of various numbers, arranged in the form of a wedge. The down of this bird is very valuable, and is sought after by the Icelanders, who choose the time when the birds have shed their quill feathers and are unable to fly, to chase them with dogs. The Whistling Swan wants the grace that characterizes the tame Swan; its neck is carried upright, without the elegant arch of its domesticated relative. It is not quite as large as the Tame Swau; the expanse of its wings is about eight feet.

“Like a Black Swan,” was formerly a well known proverb, analogous to the “Horse Marines” of the present day: unfortunately for the proverb, a Swan has been discovered in Australia, the whole of whose plumage is a jetty black, with the exception of the quill feathers, which are white. It has been domesticated in England, and may be seen in St James’ Park, eagerly seeking after the crumbs afforded by juvenile hands. It is rather smaller than the Whistling Swan.



Great Auk.



Crested Grebe.



Wilson's Stormy Petrel.



Richardson's Jaeger.

The Black-headed Gull, is common in most parts of America, and often seen, too, in the warmer regions of Europe, such as the coasts of Spain, Sicily and the Mediterranean isles. On this continent it is found as far south, as Mexico and Cayenne, but not far north of the United States boundaries. From their southern winter retreat, they appear on the New Jersey coast in the closing days of April. Their noisy companies now follow the fishermen for their garbage, now glean among the leavings of the tide, now gather worms and insects in the marshes and ploughed fields, and sometimes even poach about the farm-house. They breed in the New Jersey marshes, but are rarely seen in the north-east. They go southward early in autumn.

Richardson's Jaeger, is twenty two inches in length, and the wings thirteen and a half inches long. It breeds in latitude sixty-five degrees on barren grounds, at some distance from the coast. It feeds on shelly mollusca, abounding in the small lakes of the far north and is a sore tormentor of the Gull genus. It is occasionally found in the bays near Boston in the winter season.

Wilson's Stormy Petrels are very interesting and innocent creatures, and yet through the ignorance and superstition of sailors, it bears an evil reputation and sundry bad names, as Stormy Petrels, Devil Birds, and Mother Carey's Chickens, it is supposed to involve in a storm the vessel it follows; no sooner is a vessel off soundings, than flocks of these birds begin darting around it, and finally become its regular followers. Its purpose is apparently to catch the mollusca tossed up by the surge, as also whatever is cast overboard.

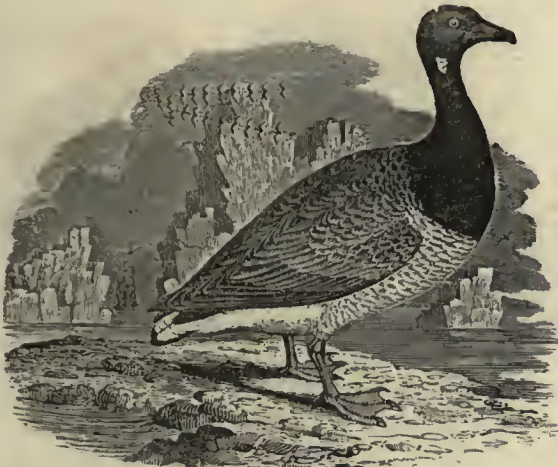
The Great or Common Tern is about fifteen inches long, and thirty inches across the extended wings. It inhabits both continents. On the eastern it summers, and breeds in Greenland and Spitzbergen, as also in the arctic shores of Siberia and Kamschatka, migrating in winter to the Mediterranean, Madeira and the Canaries. In America it breeds along the coasts of the Middle and Northern States and on the sand-bars of the Great Lakes.



The Great, or Common Tern.



Black-headed Gull.



Brant, or Brent Goose

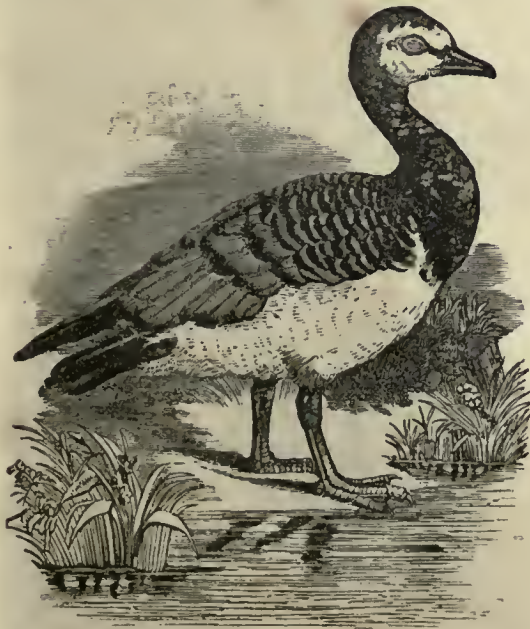
The Brant, or Brent Goose, is about two feet long and three and half feet across the wings, and is one of the aquatics common to the arctic regions of both continents. They breed in multitudes on the coasts and islands of Hudson's Bay, but are rarely seen inland. In Europe they haunt Greenland and Spitzbergen. In winter they abound in Ireland and Holland, remaining there till spring. In America, they visit most of the north and middle states, but passes the winter as far south as New Orleans. They migrate southward in September. The Brant feeds usually on the bars at low water and occasionally in the marshes. Their common food is the laver and other marine plants, though they sometimes eat small shell-fish. In winter their flesh is esteemed a great delicacy.

The Barnacle Goose, is said to abound in the arctic regions of either continent, which are its breeding grounds, migrating in autumn and winter to milder climes. In the United States, they are known merely as passengers along its coasts. The fact of this bird hiding itself, in breeding season, in unknown polar-regions has given rise to the absurdest fables concerning its origin. It was long believed, even by learned men, to be the product of certain shells, found on a species of tree in Scotland and the Orkneys, or on the rotten timber of decaying ships. When these strange fruits had attained maturity, they dropped into the sea and became geese. But we need not enlarge on such absurdities.

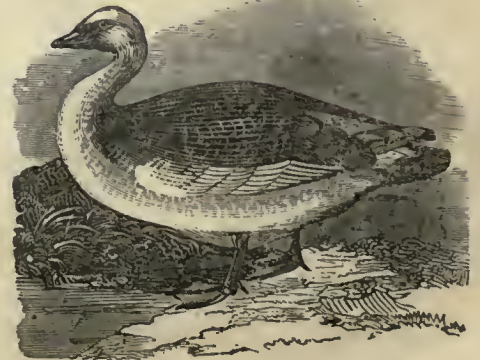
The Domestic Goose is so familiar to all, that no special description is needed. It is a handsome creature, though its voice is not very musical or its gait very elastic.



Wandering Albatross.

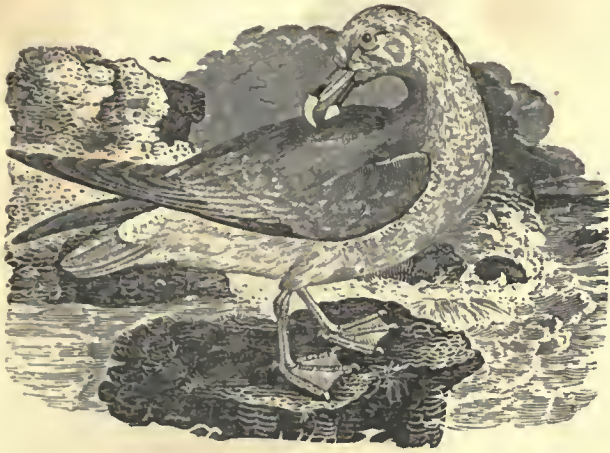


Barnacle Goose



Domestic Goose

WATER BIRDS.



Fulmar Petrel.



Red Phalarope.

The Fulmar Petrel dwells nearly all the year upon the arctic seas. Congregating there amid the floating ice, they seek the resorts of the whale, and other oil-bearing animals and feast on such fragments of their carcasses, as they may fall in with. The whale ships they regularly follow, and when the captured whale is cut up, a thousand or more of these birds often muster and wrangle for the oily morsels floating around. The Petrel is found in some of the islands off Northern Scotland. These islanders use the oil extracted from it for culinary and medicinal purposes. Its flesh, too, is eaten by the Greenlanders, while its down is considered very valuable.

The Red Phalarope inhabits the whole arctic circle during summer, and there breeds, laying four eggs of an oil-green color, crowded with irregular spots of dark umber-brown. The fledglings take wing in July or early August, and with their parents start in September, for their tropical winter quarters. They are rarely seen in the United States, and as seldom seen in England or Germany. They feed chiefly on certain winter insects in the salt-waters frequented by them.

The Wandering Albatross is from three to four feet long and from ten to seventeen across the wings. Except during the short breeding season, they are perpetual wanderers, apparently passing from one extremity of the globe to another. It preys also on the flying-fish and, this failing, on the abundant molluscous animals of the middle seas. Their voracity is enormous, and their stupidity after gorging is such that unresistingly they suffer themselves to be knocked on the head. They are taken in various modes by the Kam-schatdales for the sake of their intestines, which are used as bladders to float the buoys of their fishing nets.



Pelican.



Puffin.



Patagonian Penguin.

The Patagonian Penguin is entirely aquatic in its habits; it is, in fact, expressly formed for the water; its boat-like form of body—its short limbs—its compressed, close and rigid, or scale-like plumage—its paddle-like wings, and broad, webbed feet, concurring to fit it for its dwelling on the ocean. Its range of habitation is restricted to the latitudes south of the line, but within this boundary it is widely distributed, being abundant not only in the Straits of Magallen, and on all the adjacent islands, but extending to Australia, through the islands of the South Pacific. A colony of these birds, covers an extent of thirty or forty acres at the north end of Macquarrie Island, in the South Pacific Ocean. The number of Penguins collected together in this spot is immense, but it would be almost impossible to guess at it with any near approach to truth, as, during the whole of the day and night, thirty or forty thousand of them are continually landing, and an equal number going to sea. They are arranged, when on shore, in as compact a manner and in as regular ranks as a regiment of soldiers; and are classed with the greatest order, the young birds being in one situation, the moulting birds in another, the sitting hens in a third, the clean birds in a fourth; and so strictly do birds in similar condition congregate, that should a bird that was moulting intrude itself among those which are clean, it is immediately rejected from them. The females hatch the eggs by keeping them between their thighs; and, if approached during the time of incubation, they move away carrying their eggs with them. At this time the male bird goes to sea and collects food for the female, which becomes very fat. After the young is hatched, both parents go to sea, and bring home food for it; it soon becomes so fat as scarcely to be able to walk, the old birds getting very thin. They sit quite upright in their roosting-places, and walk in the erect position until they arrive at the beach, when they throw themselves on their breasts in order to encounter the very heavy sea met with at their landing-place.



Method of Capturing Wild Ducks in the Fens of Lincolnshire.

In the lakes to which the Wild Ducks resort, the most favorite haunts are observed. Then, in the sequestered part of this haunt, a ditch is cut, which is about four yards across at the entrance, and decreases gradually in width from the entrance to the farthest end, which is more than two feet wide. The ditch is of a circular form, but does not bend much for the first ten yards. The banks of the lake on each side of this ditch ("or pipe," as it is called) are kept clear from reeds, and coarse herbage, in order that the fowls may get on them to sit and dress themselves. Along the ditch poles are driven into the ground, close to its edge, on each side, and the tops are bent over across the ditch, and tied together. These poles, thus bent, form at the entrance of the ditch or pipe an arch, the top of which is ten feet distant from the surface of the water. This pipe is made to decrease in height as the pipe decreases in width, so that the remote end is not more than eighteen inches in height. The poles are placed about six-feet from each other, and connected by poles laid lengthwise across the arch and tied together. Over the whole is thrown a net, which is made fast to a reed-fence at the entrance and nine or ten yards up the ditch, and afterwards strongly pegged to the ground. At the end of the pipe farthest from the entrance is fixed a "tunnel net," as it is called, about four yards in length, of a round form, and kept open by a number of hoops, about eighteen inches in diameter, placed at a small distance from each other to keep it distended. Supposing the circular bend to be to the right when one stands with his back to the lake, then on the left hand side a number of reed fences are constructed, called "shootings," for the purpose of screening the "decoy-man" from observation, and in such a manner that the fowl in the decoy may not be alarmed while he is driving those that are in the pipe. These shootings, which are ten in number, are about four yards in length, and about six feet high. From the end of the last "shooting," a person cannot see the lake, owing to the bend of the pipes, and there is no further occasion for shelter. Were it not for these "shootings," the fowl that remained about the mouth of the pipe would be alarmed if the person driving the fowl already under the



Method of Capturing Wild Ducks in the Fens of Lincolnshire.

net should be exposed, and would become so shy as entirely to forsake the place. The first thing the decoy-man does when he approaches the pipe is to take a piece of lighted turf, or peat, and hold it near his mouth, to prevent the birds from smelling him. He is attended by a dog, trained for the purpose of rendering him assistance. He walks very silently about half-way up the shootings, where a small piece of wood is thrust through the reed fence, which makes an aperture just large enough to enable him to see if any fowl are in; if not, he walks forward to see if any are about the entrance of the pipe. If there are, he stops and makes a motion to his dog, and gives him a piece of cheese, or something else, to eat; and, having received this, the animal goes directly to a hole through the reed fence, and the birds immediately fly off the bank into the water. The dog returns along the bank between the reed fences, and comes out to his master at another hole. The man then gives him something to reward and encourage him, and the animal repeats his round until the birds are attracted by his motions, and follow him into the mouth of the pipe. This operation is called "working" them. The man now retreats farther back, working the dog at different holes until the Ducks are sufficiently under the net. He then commands his dog to lie down behind the fence, and going himself forward to the end of the pipe next the lake, he takes off his hat and gives it a wave between the shooting. All the birds that are under the net can then see him; but none that are in the lake can. The former fly forward, and the man then runs to the next shooting and waves his hat, and so on, driving them along until they come to the tunnel-net, into which they creep. When they are all in, the man gives the net a twist, so as to prevent them from getting back. He then takes the net off from the end of the pipe, and taking out, one by one, the ducks that are in it, dislocates their necks. This is the scene represented in the cut at the head of this page. The net is afterwards hung on again for the repetition of the process; and in this manner five or six dozen have some times been taken at one drift.



Great Auk, or Northern Penguin.



Razorbill.

The Great Auk or Northern Penguin, inhabits the regions of eternal cold. It is here found upon floating ice-masses, far from land, to which it resorts only in June and July, its breeding season. Its wings are but four inches long, its body, three feet. The Auk is an unequalled diver, and feeds chiefly on marine plants. They are found, in great numbers in the Terroe Isles, Iceland, Greenland, and Newfoundland.

The Razorbill is one of the aquatic Auks, and like the Great Auk, is numerous in the higher latitudes. This species, however, abounds also on the cliffs of England. There it breeds on the ledges and steep rocks, and is quite a business with the people in the vicinity to take their eggs, which are reckoned a delicacy.

The natural and habitual haunts of the Little Auk seem to be the highest northern latitudes, and their appearance even in any of the temperate latitudes is doubtless from their being driven thither by storm and exhaustion. Their principal food is marine animals, which are found in the fissures of the ice, when broken up by storms.

The Puffin, or Coulterneb inhabits the cold regions of the entire north. Their nest is merely a deep excavation in the earth, for which they often substitute a rabbit's deserted burrow. Their food is small fishes, crabs, shrimps and sea-weeds. They both walk and fly with difficulty.



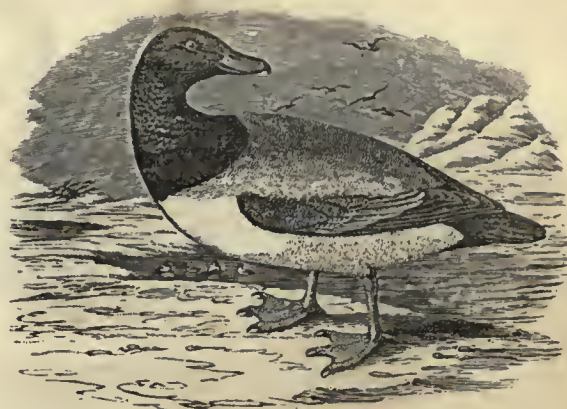
Little Auk.



Puffin.



Eider Duck.



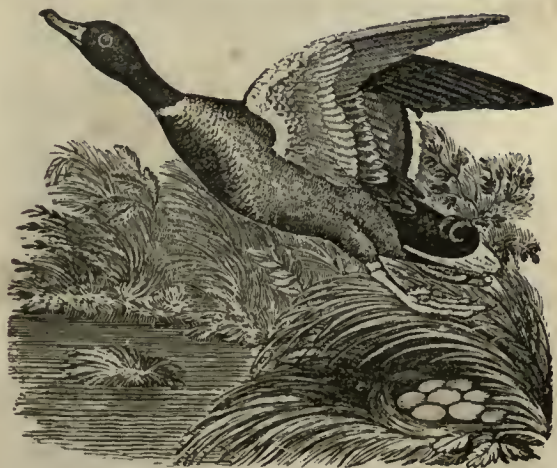
Canvas-back Duck.

The American Teal is common in both the northern and temperate regions of this country. In the course of the winter they proceed as far south as Jamaica, and the shores of the Mexican Gulf. They frequent ponds, marshes, and the reedy shores of rivers, and subsist on aquatic plants. Their eggs are ten or twelve, and the female takes the whole charge of incubation, the males, at this time, quitting and associating in squads by themselves.

The Eider Duck is remarkable for its soft and valuable down, a defensive provision of nature for the regions in which it generally dwells. These regions are the far north, and here its favorite resort is the sea. On this continent they are found at the extreme north, but, in severe winters, they occasionally stray southward as far as the capes of Delaware. The female lays from six to ten eggs, of a greenish-white. The down, from the breast of this bird, is greatly valued.

The Canvas-back Duck is said to be peculiar to our Western Continent. Its summer breeding grounds are from the fiftieth degree north latitude upwards. They arrive in the United States about the middle of October, and most of them make their winter quarters in Chesapeake bay and its tributaries. Their principal food is the eel-grass, which grows all over the flats subject to the inflowings of the tide. About the first of November they are in prime order for the table, and their flesh is esteemed a great luxury.

The Mallard, or Common Duck, the original of our domestic Duck, is common to most of the northern hemisphere. They commonly build their nests on the borders of rivers and lakes, laying therein from ten to eighteen bluish-white eggs. The female lines her nest with down from her own breast.

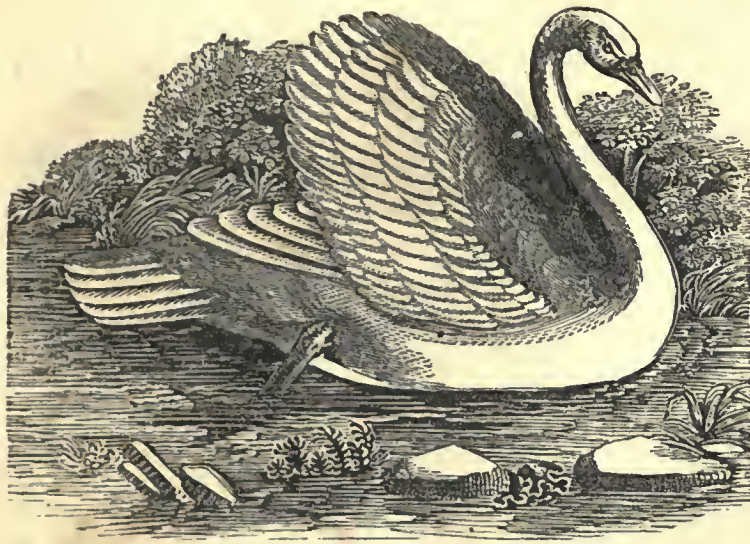


Mallard, or Common Duck.

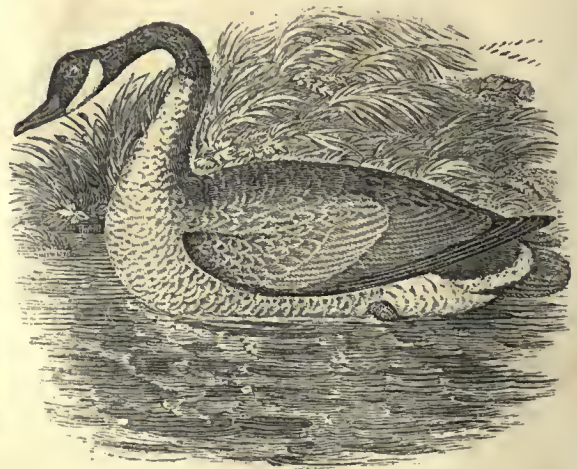


American Teal.

WATER BIRDS.



The Mute, or Tame Swan.



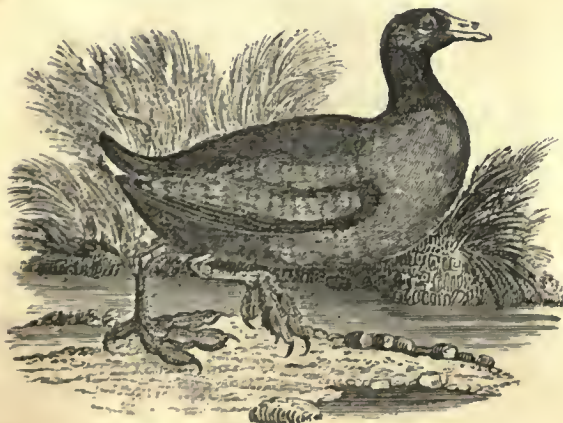
The Canada, or Wild Goose.

The Mute, or Tame Swan is one of the most elegant of birds, and, on the water, one of the most graceful in movement, though on land, like the goose it can only waddle. The female lays six or eight large, white eggs in a great nest of dry reeds, placed among reeds near the water. This Swan has long been domesticated and is a very attractive ornament to a sheet or stream of water.

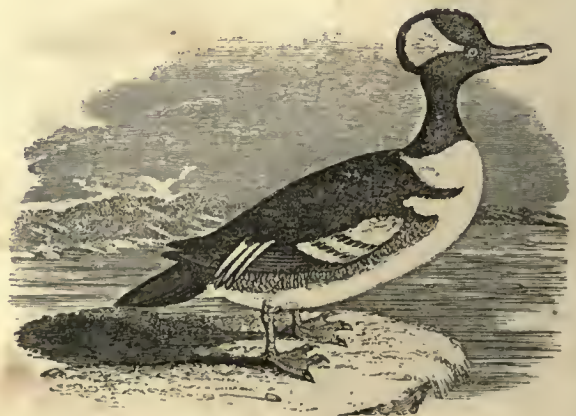
The Canada, or Wild Goose is from three to three and a half feet long and nineteen inches across the wings. It is probably as familiarly known throughout the United States as any of the migratory feathered tribe. Their passage from their southern winter home, to their summer breeding grounds around Hudson's Bay is anxiously looked for by the aborigines of those desolate regions, who depend on their flesh for food in summer. This passage, commencing about the middle of April, continues till the same time in May. Their return south begins sometime in September, and early in October they begin to make their appearance on the coasts of the eastern and middle states. Grass, berries, sedges, and marine plants constitute their food.

The Hooded Merganser is said to frequent chiefly fresh water in Virginia and Carolina and is distinguished by a fine black crest on his head. He is an excellent diver. tin

The Cinereous Coot is found in almost every part of America, from the grassy lakes in the fifty-fifth parallel to the reedy lagoons of Florida and the marshes of Jamaica. Unlike most other aquatics, these do not go north in spring to breed, but indifferently dwell and breed in all parts of our continent.



Cinereous Coot.



Hooded Merganser.



The Gadwell, or Grey.



The Snipe.

The Gadwell, or Grey, inhabits the northern regions of either continent, but here goes not further north than sixty-eight degrees, and in Europe not higher than Sweden. Their migrations seem to be to the warmer parts of Europe, since they appear chiefly on the Mediterranean coasts. Occasionally they are seen here, but not often. Their nests are mostly made among rushes, where they lay eight or nine greenish eggs. They are much esteemed as game, but difficult to catch.

The Cape Penguin is very common at the Cape of Good Hope, and the Falkland Islands. Its food is fish, and in diving its little plumelet wings are used as fins, while on land they serve as *fore legs*. It might easily be mistaken for a quadruped, while crawling through the tussocks, as while fishing it might be taken for a fish, leaping for sport.

The Snipe, in its habits, greatly resembles the Woodcock, described elsewhere in this volume. Its flight is so singular, that it is difficult shooting it.

The Perroquet Auk abounds in Kamschatka, and kindred northern regions. They are wondrous divers and swimmers, but simpletons in other matters, it would seem, from the stories told of them. They lay one large egg, and this about midsummer.

The Summer, or Wood Duck, is the most beautiful of its genus, and, according to Nuttall, is peculiar to America. It lives and breeds through the whole space, from Hudson's bay, fifty-four degrees north, to Mexico and the Antilles. The food of this bird is acorns, the seeds of aquatic plants, and insects, which frequent waters. It is much esteemed as food, and is often found in the markets of the eastern and middle states. This Duck can be tamed, and soon grows familiar.



Perroquet Auk.



Woodcock.



Summer, or Wood Duck



Cape Penguin.

WATER BIRDS.



American Widgeon.



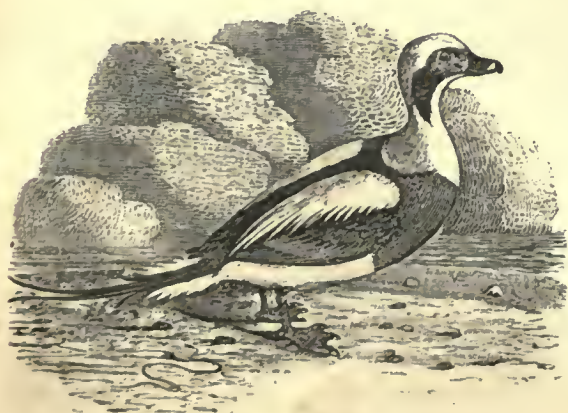
Velvet Duck.

The American Widgeon, in summer, goes north to breed, and is found as far up as the sixty-eighth parallel. In autumn and winter, it is common in most parts of the United States, but more abundant in the southern sections. It is an *intimate friend* of the Canvass-back, and being indolent, when the latter dives and brings up a certain root, which is a favorite food of both, he snatches the tit-bit and makes off. In the middle states, this bird is often in the market, and much esteemed as food.

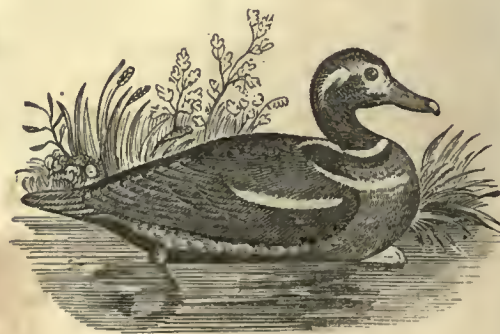
The Velvet Duck abounds in the northern regions of both continents, and goes thither in the late spring to breed. They are divers, and live on shell-fish and other marine productions. In the course of the winter they go south, and in Chesapeake bay are very abundant. Their flesh, especially that of the young birds, is by some considered a great delicacy. They start for southern regions in September.

The Long-tailed Duck, a bird alike noisy and elegant in aspect, lives chiefly in the arctic regions of both continents, and procures its food mostly from the sea. It so loves these frigid climes that it quits them only when driven southward for subsistence. It usually visits us in October, and is numerous on the shores of Chesapeake bay. It lays about five eggs of a pale, greenish-grey tint. The young are tolerable food, but the old, intolerable.

The Harlequin Duck, a singularly marked and beautiful bird, lives almost entirely in the frozen regions of the far north, rarely migrating even as far south as our middle states. It feeds on spawn, shell-fish, and the larvæ of aquatic insects. It is a skilful swimmer and diver, and its flesh is reckoned superior to that of the common wild duck. The Newfoundland fishermen name it "lord," from its superb neck and breast.



Long-tailed Duck.



Harlequin Duck.



Cormorant-fishing in China.

The Chinese Cormorant is of a blackish brown on the upper part of its body, the lower parts are whitish, spotted with brown, and the throat is white. The plate represents the manner in which the fishing is managed on the lakes and canals of China, and the process is explained in the following extract from Le Comte, an old French writer:—"To this end Cormorants are educated as men rear up spaniels or hawks; and one man can easily manage a hundred. The fisher carries them out into the lake, perched on the gun-whale of his boat, where they continue tranquil, and expecting his orders with patience. When arrived at the proper place, at the first signal given, each flies a different way, to fulfil the task assigned it. It is very pleasant, on this occasion, to behold with what sagacity they portion out the lake or the canal, where they are upon duty, they hunt about, they plunge, they rise a hundred times to the surface, until they have at last found their prey. They then seize it with their beak by the middle, and carry it without fail to their master. When the fish is too large, they then give each other mutual assistance: one seizes it by the head, the other by the tail, and in this manner carry it to the boat together. There the boatman stretches out one of his long oars, on which they perch, and being delivered of their burden they then fly off to pursue their sport. When they are wearied he lets them rest; but they are never fed till their work is over.

WATER BIRDS.



Black Skimmer.



Black-bellied Darter.

The Black-bellied Darter inhabits exclusively our far southern states, as also Mexico, Cayenne, and Brazil. It is a sinister-looking bird, having a long, dark, vibrating neck, so resembling a serpent, that one of its names is the "Snake-bird." It is a diver, and lives upon the produce of the waters. It lays eight or more eggs of a sky-blue color. Its flesh is unpalatable food.

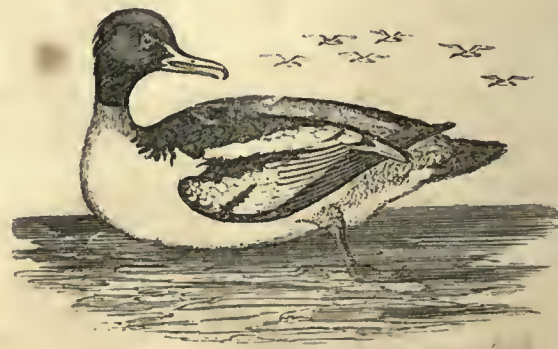
The Loon inhabits the cold and temperate regions of the northern hemisphere of both countries. Their breeding grounds are far north. Their eggs are about the size of a goose's, and in color of a dark, smoky-olive. They shed their feathers after breeding, and become so bare, as to be incapable of rising from the water. Their flesh is dark, tough, and unpalatable, and yet the young are sometimes eaten.

The Goosander inhabits the remotest north of either continent, and is almost the last of its tribe to migrate southward. It is a voracious, gluttonous bird, and sometimes gorges a fish so large, that it remains in the æsophagus until the lower part being digested, gives room for the remainder to follow. In winter they go south, as far as the extremities of the United States. They lay twelve or fourteen whitish eggs, in hollow trees, or under bushes and grass.

The Black Skimmer inhabits the warmer parts of the United States, from New Jersey to Florida, and is found also in Guiana, Cayenne, and Surinam. Their nests have been found along the shores of Cape May, about the beginning of June, and consist of a mere hollow scratched out in the sand, without the addition of any extraneous materials. The eggs are usually three in number, and nearly pure white, marked almost all over with large umber-brown blotches and dashes of two shades, and other faint ones appearing beneath the surface. The female only sits on her nest during the night, or in wet and stormy weather; but the young remain for several weeks before they acquire the full use of their wings, and are during that period assiduously fed by both parents.



The Loon.



The Goosander.



The Gannet.



The Booby.

The Booby is a bird of which many curious tales were related by the old voyagers. He is a fish-eater, but, it seems, he is sadly persecuted by another bird, named the "frigate pelican," who robs him of many of the fishes he has caught. The flesh of this bird is black and unsavory.

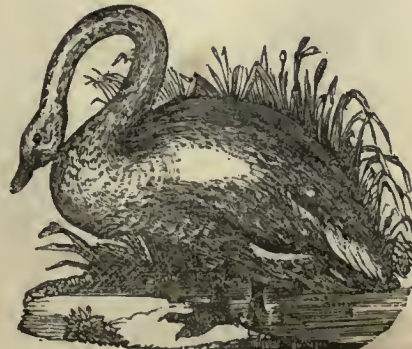
The Gannet is common to both sides of the Atlantic. In summer, they are found in the Bay of St. Lawrence, and on the United States coasts as far south as Cape Hatteras. Bass Island, among the Hebrides, is said to be so covered with nests and young birds in the breeding season, that one cannot walk there without treading upon them. They lay but one egg, and this upon inaccessible rocks on the sea-shore. They are three feet long, and six feet across the wings.

The Black-necked Stilt is common to various parts of both North and South America. Their favorite abode is great salt marshes, where they find their food, consisting of larvæ, spawn, flies, and insects. They make their nests early in May, and their eggs, four in number, are of a dark, yellowish-drab color.



Little Auk.

(317)



Swan.



Great Auk.



Black-necked Stilt.

WATER BIRDS.



Crowned Crane.



Chestnut Jacana.



Guinea, or Swan Goose.



Corncrake.

The Chestnut Jacana, is about as large as a lapwing, but with much longer legs. Its claws are remarkably long and sharp, especially the hinder ones. These birds live chiefly in marshes and are very shy. Yet one species of them are easily tamed and are made the efficient guards of various kinds of poultry.

The Long Legged Plover, is common in Egypt, on the shores of the Caspian Sea, and in the warmer parts of America. It is more remarkable for its extravagant length of legs than for aught beside.

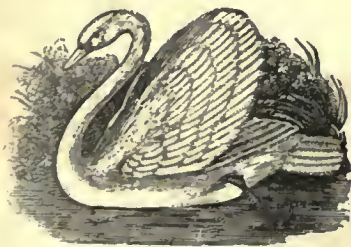
The Crowned Crane, is thus named from its singular and beautiful crest. It is a native of Africa and the Cape De Verde Islands. Formerly they were found in England, but now seem to have deserted it. They migrate in winter to the warmer climates, They are easily tamed and sometimes attain a great age in the domestic state. In setting, the breast only touches the eggs.

The Corncrake, takes its name from the sound of its cry, which, it is said, can be so exactly imitated by drawing a quill quickly across the teeth of a comb, that the bird is decoyed within reach of the person. It makes its nest of hay and lays therein from eight to twelve eggs of a greyish yellow color.

The Avoset, is remarkable for the shape of its bill, in which both mandibles curve upwards. It feeds on worms and insects, which it, scoops out of the mud by means of this peculiarly shaped bill. The female lays two eggs, about the size of a pigeon's, of an ashy grey color.

The Guinea, or Swan Goose, is remarkable for its erect, proud carriage. It is supposed, that these birds were originally brought from Guinea, but they are now settled over various parts of the world and are often kept for show. Their habits are very much like those of other domestic water-fowls.

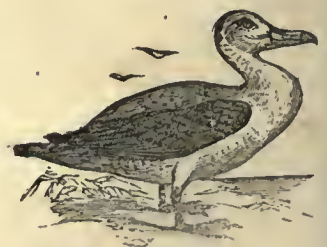
The Common Tern, is often found on the banks of American rivers near the sea. Its eggs, on which it is said, the bird broods only at night or on a rainy day, are spotted with black on a dusky-olive ground.



Swan.



Snow Goose.



Wild Duck.



Avoset.



Long Legged Plover.



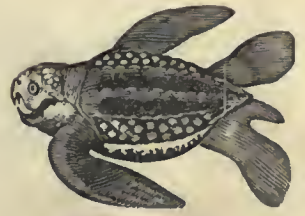
Common Tern



Green Turtle.



Land Tortoise.



Hawksbill Turtle.

WE are now to speak of reptiles: a class of creatures endowed with a wonderful variety of structure, and thus fitted for different localities and habits of life. The tortoise, the lizard, the snake, and the frog are by most distinguished naturalists, all ranked among the reptilia, and yet the differences between them are very wide. These animals, however, have several common characteristics. All are vertebrate, with cold, red blood, of variable temperature, breathing by means of lungs, or bronchial tufts, or gills; the skin is covered by neither hairs nor feathers, but by horny shields, scales, spines, or granules; else, as in the case of the frogs, it is bare. The heart has two auricles and a ventricle. There is no proper external ear, but an orifice either open or protected by a membrane. Sometimes they have four limbs, sometimes two, and at others none. Generally they are carnivorous, though occasionally frugivorous. The bite of some is mortal. A high temperature is most congenial to them, and thus they are most numerous, most various, and of largest bulk in the hottest regions.

The Tortoises are covered with a bony frame-work, composed of two portions; an upper, called the buckler, or carapace, composed of the vertebræ of the back and loins, and also of the ribs, all expanded and consolidated together; and a lower, named the plastron, or breastplate, composed of nine bony pieces. Both these bony portions vary in shape and solidity in different species. The upper and under shields are commonly united at their sides, leaving before and behind an opening for the protrusion of the head, the limbs and the tail, and these can, for the most part, be drawn in and completely shut up. The lungs of the Tortoise are large, but owing to its hard, bony inclosure it does not respire like other animals, but "gulps down" air by a process peculiar to itself.

The Tortoise has no teeth, but its jaws are cased in sharp-edged, horny coverings, with which it crops and minces the vegetables on which it chiefly feeds. Its tongue is thick, and abundantly furnished with nerves, so that it enjoys highly the sense of taste. From the conformation of its smelling and hearing organs, these senses are probably feeble, but the eye is large and well developed.

The limbs of the various species differ greatly, from a large, club foot, with only the strong claws apparent, to feet divided and webbed, and so on, to large, undivided paddles, which are to the ocean what wings are to the air. Their movements on land, are slow and awkward, and yet they readily excavate pits in the ground big enough to burrow in.

These animals endure long fasting with impunity, and are extremely tenacious of life, even when severely wounded. In a natural state they are wondrously long lived, instances being recorded of their reaching two hundred and twenty years. Their eggs are mostly round, and are buried under a thin covering of soil, and left to be hatched by the sun's heat.

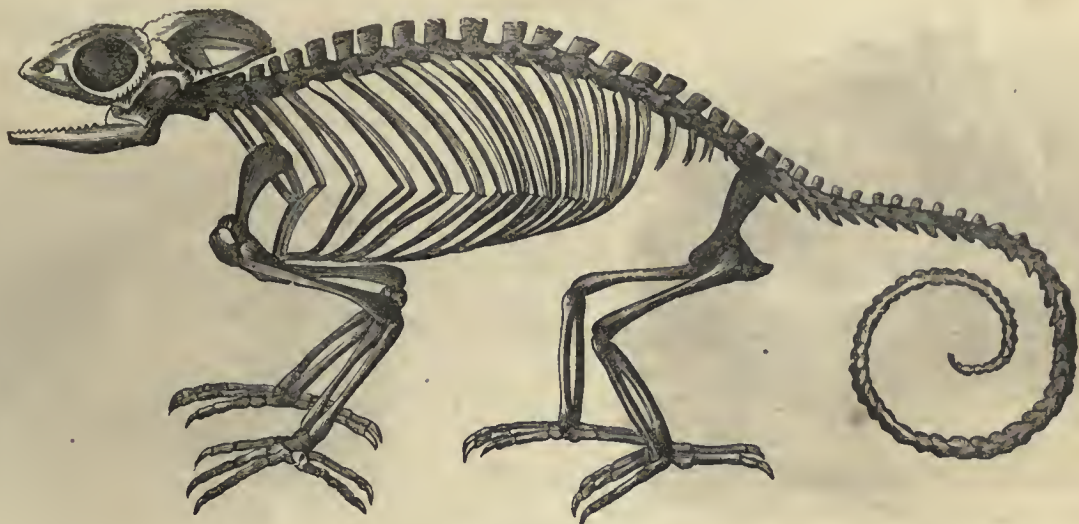
One of the species, the Green Turtle, has been known to reach the weight of five and six hundred pounds. A species called the Hawksbill is well known, and much sought after for the scales of the carapace, which are the tortoise shell of commerce; and which are cruelly separated from the living animal by presenting the convex surface to a glowing fire, as is done at Easter Island, and other places where the fishery of this animal is carried on. It appears that after this barbarous operation the poor creatures are set at liberty in order, as the shell grows again, that another crop of tortoise shell may, in a future year, be taken; the second shell, however, is very thin and inferior. The eggs of this Turtle are excellent, but the flesh is bad. The Hawksbill Turtle is not only an inhabitant of the warmer latitudes of the American seas, it frequents the Islands of Bourbon, the Seychelles, Amboyna, New Guinea, and the Indian Seas. It attains to a large size, but seldom equals the Green Turtle.



Catching Turtles on the Coast of Cuba.

It is on such a low, sandy beach as that depicted, that the Turtles deposit their eggs, taking care that they are placed beyond high-water mark. "On nearing the shore," says M. Audubon, "and mostly on fine, calm, moonlight nights, the Turtle raises her head above the water, being still distant thirty or forty yards from the beach, looks around her, and attentively examines the objects on shore. Should she observe nothing likely to disturb her intended operations, she emits a loud hissing sound, by which such of her enemies as are unaccustomed to it are startled, and so apt to remove to another place, although unseen by her. Should she hear any more noise, or perceive any indications of danger, she instantly sinks and goes off to a distance; but should every thing be quiet, she advances slowly towards the beach, crawls over it, her head raised to the full stretch of her neck, and when she has reached a place fitted for her purpose she gazes all around in silence. Finding all well, she proceeds to form a hole in the sand, which she effects by removing it from under her body with her hind-flappers, scooping it out with so much dexterity that the sides seldom if ever fall in. The sand is raised alternately with each flapper, as with a large ladle, until it has accumulated behind her, when, supporting herself with her head and fore-part on the ground, she with a spring from each flapper sends the sand around her, scattering it to the distance of several feet. In this manner the hole is dug to the depth of eighteen inches, or sometimes more than two feet. This labor I have seen performed in the short period of nine minutes. The eggs are then dropped one by one, and disposed in regular layers, to the number of one hundred and fifty, or sometimes nearly two hundred. The whole time spent in this operation may be about twenty minutes. She now scrapes the loose sand back over the eggs, and so levels and smooths the surface, that few persons seeing the spot would imagine that any thing had been done to it. This accomplished to her mind, she retreats to the water with all possible dispatch, leaving the hatching of the eggs to the heat of the sand. When a Turtle, or Loggerhead, for example, is in the act of dropping her eggs, she will not move, although one should go up to her, or even seat himself on her back; but the moment it is finished, off she starts, nor would it then be possible for one, unless he were as strong as Hercules, to turn her over and secure her."

It is at this crisis that the Turtle fishery is carried on. The fishers wait for them on the shore, and as they come from the sea, or as they return after laying their eggs, they either dispatch them with blows of a club, or turn them quickly over on their backs, not giving them time either to defend themselves, or to bludge their assailants, by throwing up the sand with their fins. When very large, it requires the efforts of several men to turn them over, and they must employ the assistance of handspikes.



Skeleton of the Chameleon.

The Common Chameleon is a native of Egypt and Northern Africa, as also of the south of Spain and Sicily. A kindred species inhabits India. It is a very singular creature, one of its peculiarities being its variations of color. And one curious fact connected with these variations is, that the two halves of the body may show a different tint at the same time. Dr. Weissenborn attributes this to separate galvanic or nervous currents directed to the two sides of the body, independently of each other.

The Alligator, or Cayman, a species of Crocodile, is peculiar to America, and thus distinguished; the head is broad; the muzzle oblong and depressed; the teeth are of unequal length; the hinder limbs are rounded and without the scales pertaining to those of the tree Crocodile, the webs between the toes are much less developed. Several species are known, which are more or less distinguishable by certain peculiarities.

This animal inhabits fresh water only. It attains the length of twenty feet, and is abundant in the Mississippi and in the lakes and rivers of Louisiana and Carolina. It is very dangerous, attacking both men and beasts, while bathing or crossing streams. Its principal food, however, is fish, which it takes chiefly by night. Numbers of them, assemble for this purpose at the mouth of some secluded creek, send forth a bellowing like that of bulls, which may be heard, in the still evening, a mile off.

When about laying the female digs a deep hole in the sandy or soft bank of the river, and deposits her eggs in layers, separating each layer from the next by interweaving leaves, dry grass, and mud. Their number is fifty or sixty. These she watches vigilantly till the young appear, which, for some months, she leads about and protects. So numerous, however, are the enemies, that rarely more than half the brood reach the water. On the approach of winter these creatures bury themselves under the mud of swamps and marshes and sink into a slumber so profound, that the severest wounds will not rouse them.



Chameleon.



Chameleon.



Alligator.



Crocodile.



Alligator attacking a Jaguar.

The Crocodile, according to the best authorities, is distinguished into four varieties, and is found in the Nile, Senegal, and other African rivers, as also in the Ganges and the lagoons of various parts of India. Most writers consider it, as the "leviathan" spoken of in Job. A portion of the Ancient Egyptians esteemed him sacred, while others dealt with him as an enemy. The former were accustomed to keep, each a tame Crocodile, adorn and feed him, and, after his death, embalm and place him in a sacred repository. This animal is no longer found in the Egyptian Delta, but still abounds in the Thebaid and on the upper Nile, and in its tributary branches throughout Nubia and Abyssinia. In Dongola it is killed for its flesh, which is considered a delicacy although it has a strong odor of musk. The natives kill the Crocodile with a harpoon as the whalers dispatch the whale. The animal feeds on fish, carrion, pigs, and dogs, which he surprises on the river banks, yet escape from him is easy, since his legs are not formed for running on land, though he is rapid in water, and besides he turns himself with slowness and difficulty.



Blowing up a Crocodile.

The Crocodile breeds by eggs, which are oblong and somewhat larger, than those of a goose. Numbers both of eggs and young are destroyed by beasts and birds of prey, among the latter of which the ichneumon has always been celebrated. A traveller in India actually blew up a Crocodile by means of an electro-magnetic battery, baiting the wire with the carcass of a goat. This adventure was occasioned by the huge Crocodile having devoured the servant of one of the traveller's friends. The destruction of the reptile occasioned much rejoicing.

REPTILES.



Common Lizard.



Flying Dragon.



Gecko.

The Lizards are usually active little creatures, delighting to bask in the sun, near some safe retreat, to which they dart with astonishing celerity upon the slightest alarm. The Common Lizard is six inches long.

The terrible name of Flying Dragon belongs to a harmless little Lizard, bearing small resemblance to the terrific animal so graphically depicted by Restch. This curious little animal lives on trees, and feeds on insects instead of devouring pilgrims bound to the Gnadenbilde. The peculiar structure of its body bears a singular resemblance to that of the flying squirrel.

The Geckos are nocturnal Lizards, remaining hidden in the crevices during the day, but wandering forth a night in search of their insect prey. They run about on smooth walls and ceilings with the greatest ease, as their feet are furnished with an apparatus exactly resembling a boy's sucker, by means of which they are able to adhere to the wall or even to the roof. The species represented are common in India.

The Salamander has the general appearance of a lizard in the body and tail, but the body is without scales, variegated with yellow and black pores. The fore-feet have only four toes and the whole have no nails. It lives in mountainous places.



Salamander.



Gerna.



Fabulous Dragon, of the Ancients.



Blind Worm.

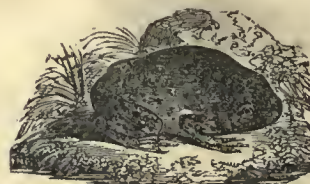
REPTILES.



Common Toad.



Common Frogs.



Common Toad.



Common Frog,



Frog and Tadpoles.

The Frogs, in the early stage of existence, are called Tadpoles. At first they appear to consist solely of head and tail, but, ere long, four legs are developed, the tail drops off, and the young Tadpole becomes a complete Frog. Another change is, though, in its Tadpole state, it was wholly a water animal, on becoming a Frog, it must often come to the surface to breathe. Frogs hibernate at the bottoms of ponds and marshes. Their skin has the property of absorbing water, so that an emaciated frog, put in a damp place, will soon look plump. There are three principal species, the Common Frog, Bull Frog, and Tree Frogs.

The Common Frog frequents marshy spots and river-banks, and is a capital swimmer. The Bull Frog is very voracious, and feeds on fishes, shell fish, and even young fowls. Its leaping powers are wonderful. The Tree Frogs are singular creatures, the construction of their feet enabling them to traverse tree-branches and even to hang on the under side of a leaf, which they so resemble in color, that insects coming unwarily nigh, are seized by the vigilant animals.

The Toad has been the theme of many marvellous tales, among which are its being poisonous, and having a precious jewel in its head. It does, in fact, secrete from its skin an acrid humor, which defends it against certain animals, but otherwise these accounts are purely fabulous. It is easily tamed. The Toad occasionally casts his skin, but always swallows it.



Bull Frog.



Tree Frogs.



Boa Constrictor.



Tiger Python.



Boa Constrictor, seizing a Rabbit.

THE Snakes, by their peculiar gliding movements, constitute an expressive type of the whole reptile order, who take their name from the Latin *repto*, I creep. The extraordinary flexibility of their bodies is owing to the structure of their vertebræ, each of which fits into the one behind it by a ball and socket joint, thus allowing free motion in all directions.

The Boa Constrictor is the general title for an order, embracing many species, of huge serpents confined to the hotter regions of the globe, and called Constrictor from their mode of destroying their prey, which is by crushing. Lurking in ambush, the tail, which is specially formed for the purpose, grasping the trunk, or branch of a tree, they dart upon their victim, and instantly enveloping it in their terrible coils, crush or strangle it. The flesh and bones of the dead victim being compressed into a shapeless mass, the snake now begins to swallow it, commencing with the head. His jaws are all distorted, the skin of the neck is stretched almost to apparent bursting; the mouth drips with a glutinous saliva, which aids deglutition, and thus slowly he sucks down the whole mass. He now quietly seeks his usual haunt, coils himself round, and lies torpid for a month, till digestion is completed, when he sallies forth for another meal. These creatures prey on large fishes as well as quadrupeds, being rapid swimmers. They are all natives of the tropic regions of America, are beautifully tinted, and gleam in the sun.

The Tiger Python is a native of India and Java. It is, of its kind, a splendid looking creature, and is often brought to Europe for exhibition. Its general characteristics are similar to the Boa.

REPTILES.



Emperor Boa.



Anaconda.

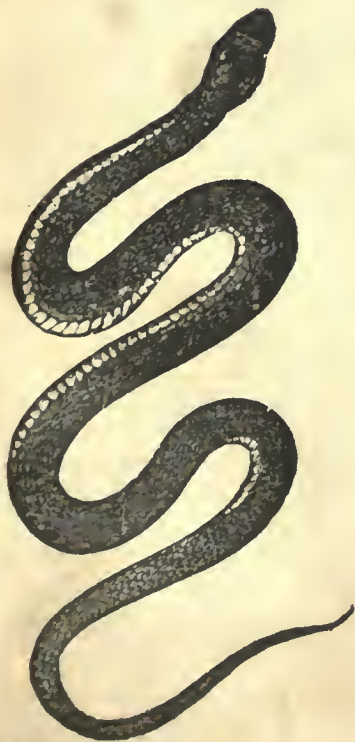
Among the principal species of these serpents is the Emperor Boa, which bears also many other exalted titles, indicating the superstitious veneration, with which it was regarded by the Mexicans.

There is also the Anaconda, which would seem to differ from the last named, chiefly in certain peculiarities of the head and the size. It bears also several other names.

These serpents, as also the Pythons, who closely resemble them, often attain a monstrous size even now, though, if we may credit ancient authors, they were much larger in old days. Diodorus Siculus, and Suetonius speak of them, as being fifty or seventy-five feet long.

The Boa Scytale has scaly plates from the eyes to the end of the muzzle, and passes by various names. Its color is brownish, with a double row of roundish, black blotches all down the back. It inhabits South America, and feeds on deer, goats, sheep, &c.

The Boa Canina is greenish-colored, with irregular, longish spots disposed in rings. They are not venomous, but have long, sharp teeth, which inflict a dangerous wound, often mortal, unless proper remedies are at once applied. The immediate cause of death is not stated, but may be presumed to be often tetanus or locked jaw. It is said that this species varies in size. They sometimes stay in houses, where they do no injury, if not irritated.



Boa Canina.



Emperor Boa, crushing a Deer.



Aboma.

The Boa Cenchrea, or Aboma, has scaly plates on the muzzle, and dimples on the sides of the jaws. Its color is yellowish, with a row of large, brown rings running down the whole back, and variable spots on the sides. It haunts the marshes of the warm parts of South America, where it preys upon animals coming to drink.

The Ringed, or Glass Snake is a harmless denizen of England, is easily tamed, and soon learns to recognize its master. It feeds on frogs, mice, young birds, &c. It sheds its skin several times a year, even to the covering of the eyes.



Rattlesnake.



Rattlesnake.

The Rattlesnakes are of various species, all of which are natives of America. The head is covered with scales; the tail is furnished with an appendage termed the rattle, consisting of several thin, horny cells, which fit into each other so loosely that, when sharply vibrated, they produce a whizzing noise. Up to a certain period, one new rattle is added each year. Its bite is terribly deadly to man and beast.



Ringed, or Glass Snake.



Boa Constrictor, attacking a Lascar.



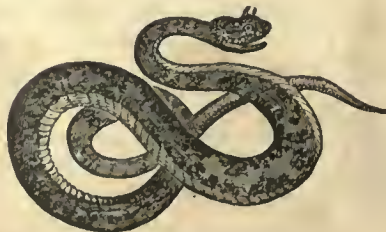
Common Viper

The Common Viper is spread all over Europe, selecting, for its haunts, dry woods, sandy heaths, peat-lands, and sunny banks. It sometimes goes by the name of Adder. It is venomous, yet not so dangerous as is often thought. It bites only in self-defence, or when suddenly molested, nor is its bite necessarily mortal.

The Egyptian Cerastes was well known to the ancient Egyptians, and is found sculptured abundantly in their temples. Herodotus speaks of them, though incorrectly, if he referred to the creature in its natural state. It inhabits the sandy desert, where in crevices it lies, for successive days, luxuriating in the sun, and being colored like the ground, there is danger of treading on and being wounded by it. Its food is mice, small reptiles, &c. It never drinks, apparently, and can endure much hunger. It is one of the snakes used by the so-named serpent-charmers of the east. The bite is mortal.



Python, seizing a Traveller.



Egyptian Cerastes.



Common Viper.



Indian Jugglers, exhibiting tamed Snakes.

The Indian Naja, or Cobra de Capello, attains to five or six feet in length, and sometimes, it is said, even to fifteen feet. The head is covered with plates, and the skin of the neck is capable of being so expanded, as to form a thin hood. When irritated, these snakes elevate the upper part of the body, expand their hood, and spring on the foe with great quickness, and its bite being deadly, an encounter with them is very dangerous. Their color varies, some being light and others dark. The natives rather venerate than dread this snake, thinking it harms no one unless provoked. They have superstitions about it, such as that it is a visitor from another world, is superior to man, &c.

In India, at the present day, the serpent charmers are a well known division of the numerous caste of jugglers that are found in every district. Mr. Forbes, in his "Oriental Memoirs," appears to attach some credit to their powers of alluring the Cobra de Capello, and other snakes, from their hiding-places, by the attraction of music. Mr. Johnson, however, in his "Sketches of India Field Sports," says, "The professed snake catchers in India are a low caste of Hindoos, wonderfully clever in catching snakes, as well as in practising the art of ledgerdmain; they pretend to draw them from their holes by a song, and by an instrument somewhat resembling an Irish bagpipe, on which they play a plaintive tune. The truth is, this is all done to deceive. If ever a snake comes out of a hole at the sound of their music, you may be certain that it is a tame one, trained to it, deprived of its venomous teeth, and put there for the purpose; and this you may prove, as I have often done, by killing the snake and examining it, by which you will exasperate the men exceedingly."

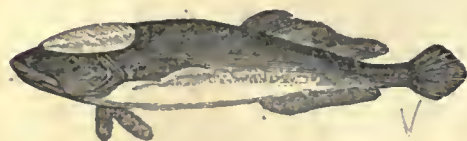
The account of Mr. Johnson certainly appears the more probable version of this extraordinary story; yet enough remains to surprise, in the wonderful command which these people possess over the reptiles that they have deprived of their power of injury, and taught to erect themselves and make a gentle, undulating movement of the head, at certain modulated sounds. There can, we think, be no doubt that the snake is taught to do this, as the bear and cock of the Italians are instructed to dance.



Haddock.



Tunny



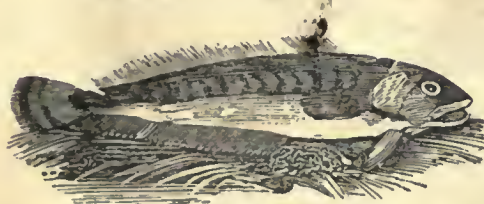
Remora, or Sucking Fish.



Roach.



Common Perch.



Ling.



The Red, or Cuckoo Gurnard.

THE breathing organs of fishes are different from those of land animals, being, instead of lungs, the singular apparatus called gills. The water passing into the mouth and out at the gills, sufficient oxygen is strained out to purify the animal's blood. If the oxygen has been exhausted already, the fish at once dies. The tail serves as an oar to scull the creature along, while the fins act as balances. Most fishes have a "swimming bladder," a pouch filled with gas, which being compressed or expanded, they are enabled to sink or rise.

The Red, or Cuckoo Gurnard, is common on the English coasts, and is adorned, while alive, with very beautiful colors. It rarely exceeds fourteen inches in length. There are nine species of it known on those coasts.

The Common Perch, so familiar to anglers, is excessively voracious, and will grasp at any bait, even the eyes of its fellows already caught. It rarely exceeds two pounds and a half in weight, and its flesh is highly esteemed.

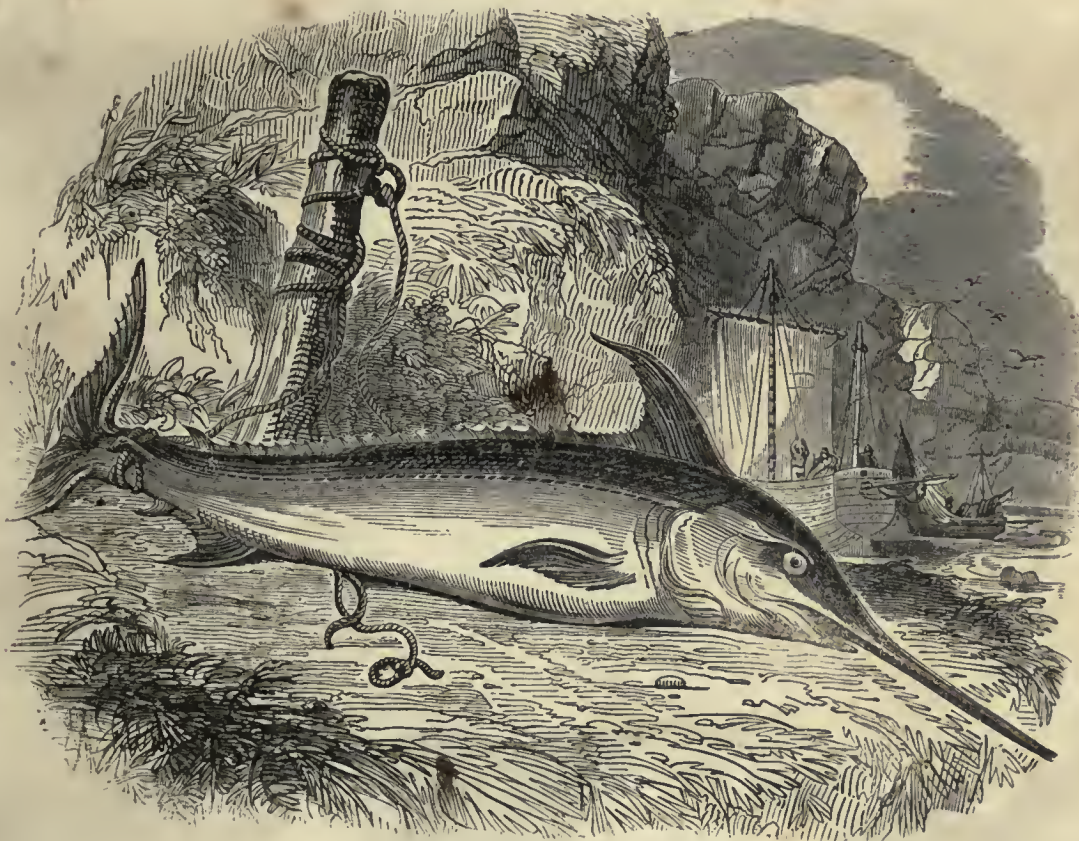
The Roach loves clear, still waters, with a sandy or marly bottom, but is also considered a lake-fish. It is about a foot long, colored like the Dace, and, like that, coarse in flesh.

The Ling is from three to four feet long, with a flat head, of which the upper jaw is longest, and a rounded tail. Its color is grey. It is in season from the first of February to the first of May. Its liver then abounds in a fine-flavored oil.

The Tunny averages four feet in length, and abounds in the Mediterranean. They are taken in May and June, at which season immense shoals rove along the coasts, and a peculiar species of net is employed in their capture. They are often found on the English coast.

The Haddock seldom exceeds eighteen inches in length, is gregarious, but shifts its haunts at irregular periods. Shoals sometimes appear on the Yorkshire coasts, three miles broad. When in season, this fish is prized for its fine flavor.

The Remora, or Sucking Fish, is found in the Atlantic and Pacific oceans, and the Mediterranean sea, is about a foot and a half long, with a herring-shaped body, and a thick, flat head, oval on the top, and crossed by ridges, which, when inflated, enable it to adhere to any substance.



Sword fish.

The Sword Fish inhabits all parts of the Mediterranean, and is sometimes seen near England and Scotland; his "sword" is a lengthening of the upper jaw, is very strong, and can do considerable injury to any object, against which it strikes. In the British Museum is a portion of a ship's bottom completely perforated by one of these swords. The shock must have killed the fish.

This fish is usually from twelve to fifteen feet long, and feeds chiefly on tunnies, which it transfixes with its weapon. It is said to be peculiarly hostile to the whale, and that vessels are struck from being mistaken for whales.

The Flying Fish abounds in the warmer latitudes, but is sometimes seen off our coasts. Its so named "flight" is merely a springing out of the water, and sustaining itself temporarily in the air by its large pectoral fins. Its flight rarely exceeds two hundred yards, and its object is to escape the pursuit of its foes. But, while in the air, it is watched for by gulls and albatrosses, so that between its two classes of pursuers, it is pretty sure to become a prey.

The Sturgeons are remarkable for bony plates extending along the body. They are very common in northern Europe. Isinglass is made of the air bladder, caviare is made of the roe; and the flesh is very good. The female deposits her eggs in fresh water, and the young when hatched, seek the sea, which they do not leave till ready to spawn.



Sturgeon.



Flying-fish.



Albatrosses and Sharks, pursuing Flying Fishes.



Monk Fish.



Dace.



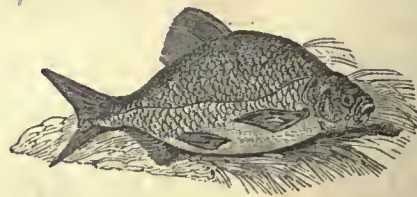
Trout.



Blennies.



Skate.



Bream.

The Monk Fish belongs to the Shark genus, and therefore has a body decreasing in size from the head to the tail, a rough skin, a mouth placed far beneath the end of the nose, five apertures on the sides of the neck for breathing, and the upper portion of the tail larger than the lower.

The Dace has an oblong body, with a small head, is dusky green on the back and silvery on the sides and belly. It is very lively, and fond of frolicking near the surface of the water. Its flesh is rather coarse and insipid.

The Trout is about a foot long and is found in rivers and lakes, and in mountain streams. It feeds on river flies and other water insects. It stands first among river fish for delicacy of flavor, and affords the angler a favorite sport.

The Blennies are of several species, and live at the bottom of the water, preying chiefly on small crabs. They produce from two to three hundred living progeny at a time.

The Skate is a strange looking creature, appearing at first sight to be without a head. The eyes are on the upper surface, the mouth and the gills on the under; the tail is long and set with three rows of spines, and the skin is rough. The flesh is white and excellent. The eggs of this fish are often found on the beach, after a storm, two or three hundred in number, in a thin, square bag.

The Bream is found in lakes with a bottom of marl, clay or plants, or in gently flowing rivers. It reaches two or three feet in length and weighs from four to five pounds. It is esteemed a great delicacy for the table. It abounds chiefly in lakes.

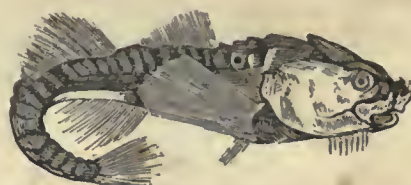
FISHES.



Whiting.



Grayling



- Father Lasher.



Gold Fish.



Tench.



Shad.

The Grayling delights in clear, rapid streams, which it ascends, in early spring, to spawn, whence, at the approach of winter, it returns to the sea. It is caught with a fly, to which it rises readily. It is from ten to eighteen inches long, of a silvery-grey color, and inhabits Europe and Siberia. The Laplanders use its entrails, instead of rennet, to make cheese of reindeer's milk.

The Whiting is of slender form, and rarely over a foot long. They are plentiful on the English coasts, and are reckoned the lightest and wholesomest of fish, being often prescribed to dyspeptics. They are in prime condition during spring and summer. They live at the bottom of the sea, feeding on little crabs, worms, and young fish, and are usually caught with ground lines.

The Father Lasher frequents the deep sea, though seeking its prey near the surface. On the English coasts, these fish are about nine inches long; but on the Greenland coasts, they are said to measure six feet. The head is large, and armed with stout spines, and the body, thick at the neck, decreases in size towards the tail. They are rapid swimmers, and prey especially on blennies, codlings, and herrings. They are named from the violent lashing of their tails, when caught and cast on the sand.

The Tench, in its habits, resembles the Carp, and is even more sluggish than the latter. It especially loves the muddy banks of ponds, where the weeds grow thickly. It is more tenacious of life than even the Carp.

The Gold Fish is a native of China, and a river fish, though often there, as here, kept in vessels within doors for ornament. It was domesticated in England, about 1691, and breeds freely in ponds. When kept in glass vessels, it becomes partially tame, and apparently knows the voice of its accustomed feeder.

The Shad is about eighteen inches long, is greenish-black above, and silvery on the sides and belly. It goes up the rivers, in May, to spawn. It is very voracious, and herrings three inches long are sometimes found in its stomach. Its flesh is esteemed a great delicacy.

The body of the Wolf fish is roundish and slender; the head large and blunt; the fore-teeth, above and below, conical; the grinding teeth and those in the palate round; and the fin covering the gill has six rays. It is from three to seven feet long; spawns on sea-plants, in May or June; and lives chiefly on shell-fish.

The Sucking Fish has a body of nearly wedge-like shape. Its head is broader than its body; the fin covering the gill has ten rays; and it has an oval breastplate streaked in the form of a ladder and toothed.

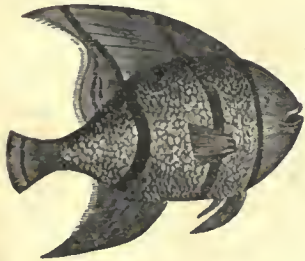
The Chaetodon, or Catfish, has an oblong body, a small head, slender and bending teeth, five or six spines on the fin covering the gills, and a fin on the back covered with scales.



Wolf Fish.



Sucking Fish.



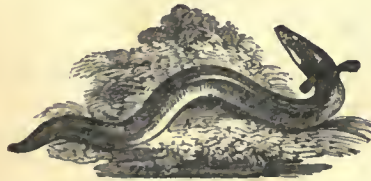
Chaetodon, or Catfish.



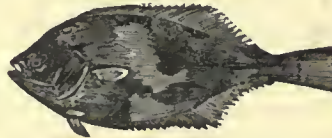
Torpedo.



Lamprey.



Eel.



Flounder.



Horned Silurus.

The Torpedo affords a second instance of the electric power belonging to a fish. The organs producing the shock appear externally in two elevations extending from the eyes about half down the body. It is usually found in the Mediterranean. The force of the shock depends on the size and health of the fish, but a fair-sized, healthy fish can, for a time, disable a strong man. Occasionally a fish of this kind has been caught, weighing one hundred pounds.

The Lamprey is chiefly remarkable for the mouth, which, being formed like that of the Leech, enables it to hold firmly to every object by suction. The breathing apparatus externally consists of fourteen apertures, seven on each side of the neck. It undulates through the water. It is found in the Mediterranean, in the northern European rivers, and also in America. It goes up rivers to spawn, and at this time is in highest order for the table.

The Flounder is somewhat less than a foot long; has no tubercles, but has a band of small, sharp spines on the side line, and at the junction of the dorsal and posterior fins with the body, and is covered with small, oblong scales adhering firmly to the skin. It haunts the mouths of rivers, and penetrates into fresh water. It lives long after being captured. Its flesh is greatly prized.

The Horned Silurus has a large head and oblong body; the fin covering the gills has from four to fourteen spines; and the leading bones or spines of its back are toothed.

The Eels have a form very like that of the serpents, and possessing no belly-fins, are named Apoda, or footless fish. Like serpents, they seem destitute of scales, yet when the skin is dried, very small scales may be seen through the half-transparent outer skin, and by separating the two skins may readily be detached. They usually inhabit muddy ponds and rivers, and are also found in many canals. They are sensitive to cold, and, reversing the salmon's habits, they descend the rivers to spawn in the sea, whence the young work their way back. They can live long out of water, and often go inland for various purposes, one of which is to find the frogs and worms on which they feed. In winter they lie torpid in the mud, and are then speared by thousands.



Coleraine Salmon Leap on the Bann.—Angling for Salmon.

The Salmon is a migratory fish, annually quitting its home, the sea, and proceeding some distance up rivers to spawn. This being done, it returns in spring to the sea. In ascending streams, it often surmounts falls of fifteen feet. The young are hatched about March, and at once start for the sea, and by June the rivers are cleared of them. The fecundity of this fish is immense, else with the creatures, both aquatic and terrestrial, who prey alike on fish and spawn, the race would be exterminated. How delicate a food is the Salmon is familiar to all.

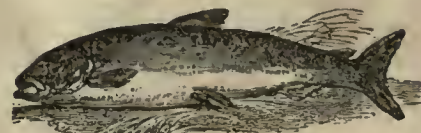
The Salmon, is taken in many different modes. Some of these we will describe. 1st. The stake-nets, introduced about a hundred years ago, were nearly crescent shaped, and being tied to the top of stakes, rose with the flow of the tide, so that they caught the fish only at the ebb. Afterwards, however, they were so improved, as to be efficient during both ebb and flow. This is the most effectual of all modes of Salmon catching, five hundred of the fish having been taken at one haul in this net.



Salmon.



Charr.



Salmon.



Fishing boats off St. Alban's Head.

Stake nets are used only where the tide is incessantly flowing and ebbing, and are confined within the bounds of low water mark, not being adapted to channel or stream. 2nd. The coble nets are suited to a higher portion of the stream, as the stake nets are adapted to its mouth. Where the banks are not far apart and in the pools, which are the Salmon's favorite resorts, these nets are used with much effect. They are, however, liable to some objections, that is dragging over and disturbing the spawning beds, and bruising the fish taken. 3rd. Spearing, is performed as follows. A dyke of loose stones is constructed in the river, which serves to direct the fish coming up the stream, to the channel nearest the bank. At the end of this dyke is a hut, built of tree branches, wherein the fisherman awaits the approach of the Salmon, which he strikes with a five-pronged instrument. 4th. Angling may serve to supply the angler with table luxuries, but may be deemed rather a mode of recreation, than a means of livelihood. It is extensively pursued on the banks of productive Salmon streams, and on the Tweed, for example seventy or eighty persons may be seen thus engaged within the space of half a mile. April and May are, in Great Britain, the permitted seasons for angling. There are different methods of taking these fish, but our limits will only admit the above.



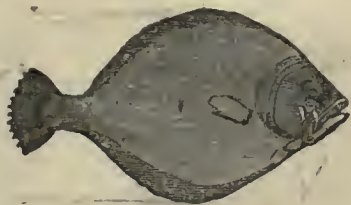
Torpedo.



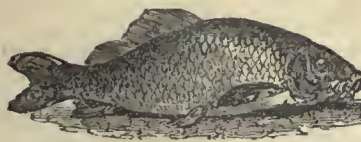
Group of fish.



Flying fish.



Turbot.



Carp.



White Shark.

The Turbot is found on most of the English coasts, but chiefly on the southern coast of Ireland. The fishery is conducted both by nets and lines. The Turbot is dainty about his bait, which consists of smelts and other small fish, and will touch none that is stale. This fish is greatly prized for the table.

The Carp inhabits ponds, lakes, and sluggish streams, is very shy, and lives to a great age, its scales turning grey, as does the human hair. They sometimes attain an enormous bulk. Two or three pounds are the average weight of a good Carp, though they sometimes reach eighteen pounds.

The White Shark is the scourge of both the Mediterranean and the Atlantic, and the special detestation of all sailors. He lurks about ships for the sake of the scraps thrown overboard, and generally swallows these, whatever they may be. He has also been known to swallow a man entire. The South Sea Islanders greatly dread this horrid creature, for every year many of them become his victims.

The Hammer-headed Shark inhabits the same latitudes, and resembles the White Shark closely in all points, save the head, which is widened out at each side like a double-headed hammer, or mallet. The eyes, being placed at either extremity of the head, must possess a very extended vision.

The Fox Shark is also called the "Thresher," from the use it makes of its tail both in attack and defence. It is a roaming animal, and is found in higher latitudes than other sharks. Its teeth are less formidable than those of the other species, but it is very bold and voracious, and its tail is a formidable weapon. The largest specimens found have been twelve or thirteen feet long, the tailing constituting about half its entire length. The body and fins are dark blue, and the belly mottled with white.



Hammer-headed Shark.



Fox Shark



Attacking a White Shark.



The White Shark.

The Loach has a body oblong, and of nearly the same breadth throughout. The head is small and somewhat elongated, the eyes are in the back part of the head, the fin covering the gills has from four to six rays, and the covers of the gills are closed beneath.

The Pike, an exceedingly fierce, voracious fish, is now common in most English lakes and rivers, though formerly very rare. It affords anglers much sport, and is caught by the method called "trolling." A gudgeon, roach, or minnow is so fixed to several hooks, that, on being drawn through the water, it spins rapidly round, and attracts the notice of the Pike, who dashes at the bait, carries it to its hiding-place, and swallows it. The angler then jerks the line and draws to land the fish bleeding, but ferocious to the last. The Pike varies in weight from two to twenty or thirty pounds.

The Cod, when caught, are placed in a well-boat, through which the salt water passes freely, and thus are brought to market living. Successful experiments have been made to preserve this fish in salt water ponds, where it thrives well. Its fecundity is enormous, the roe of one fish having been ascertained to contain nine millions of eggs.

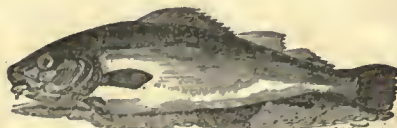
The Barbel is found in most European rivers. Its flesh is unpalatable, yet it is eagerly sought by anglers, as the spirit and vigor displayed by it, when hooked, afford fine sport. It feeds chiefly on larvæ and mollusca, which inhabit the banks, and obtains them by rooting in the sand with its snout. It often reaches a great size, measuring three feet in length, and weighing from fifteen to eighteen pounds. They are mainly captured with nets.



Loach.



Pike.



Cod.



Barbel.

FISHES.



Sprat Boat, fishing off Purfleet, on the Thames.

The Sprat is about six inches long, and above one inch thick. It is caught in the Forth, near Edinburg, and on the eastern coast of Ireland. It is also found, in large shoals, on the Norfolk, Suffolk, Kent, and Essex coasts of England. In summer, this fish inhabits the deep water, and is then in roe. It is in highest condition at the close of the season for fresh Herrings, and more, perhaps, are consumed of this species of fish, than of any other, the quality and flavor of the flesh being universally relished. It is also used as a manure, to the extent of several thousand tons, yearly.

The fishing season commences in November, and the foggy nights of this month are esteemed most propitious to the fishermen. The finest fish are caught in the same manner as mackerel; but the largest quantities are taken by "stow-boats," manned with five or six persons. The meshes of the nets employed by these boats are so minute that water alone will pass through. Hence immense numbers of small fry, of every species, are caught with the Sprats, and by consequence, it is said, turbot, brills, soles, &c., once abundant on these coasts, have become scarce.

The stow-boat owners are usually joint proprietors; the principal owner holding three shares, and therefore bound to keep the boat, nets, and other appliances in repair, and the others possessing shares according to their means.

The Sea Worm has a slender body, with double fins covering the gills, thirty spines, and armed externally with five teeth-like bones.



Sprat.



Sea Worm.

FISHES.

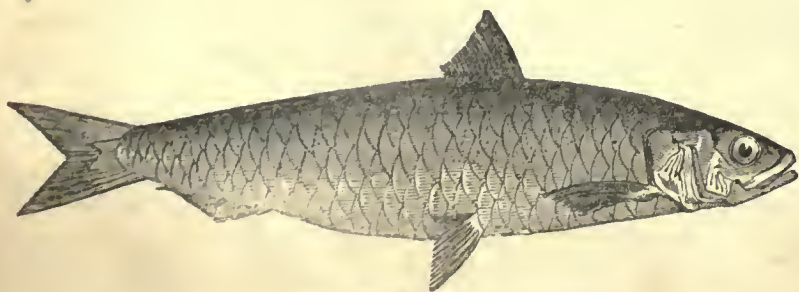


Mount Bay, a fishing ground for Pilchard.

The Pilchard greatly resembles the Herring in appearance, but may be known by the position of the back fins. In the Pilchard this is so fixed in the centre of the body, that if the fish be held by it, the body exactly balances, while, in the Herring, this fin lies back of the centre, so that the fish, when suspended thereby, hangs with his head downwards.

Unlike the Herring, which visits all parts of the British coast, the Pilchard is found only on the Devonshire and Cornwall shores. However, the immense numbers, which annually come here, compensate for their limited range. The south of Ireland is occasionally visited by them, and the French and Spanish coasts are their quite frequent resorts. They spawn sometimes in May, but the usual season is October. It is now believed that they do not migrate to the arctic seas, but that their sole change of location is from the deep sea to the shore and back again. The Pilchard is from nine to eleven inches long, thus differing little in bulk from the Herring. It differs however, from the latter in several points, two of which are its

being more oily and having no teeth.



The Pilchard

The chief stations of the Pilchard fishery are St. Ives, in North Cornwall; Mount's Bay, in the south; St. Mawes, and Meoagissey, on the east; and so on to the coasts of Devonshire. There are two modes of fishing, with seines and with nets. The former requires considerable capital, as about eighteen men and three boats are employed in conducting a single establishment, while

FISHES.



Fishing Boats off Scarborough.

the drift nets are managed by four or six men, in one boat. The seine fishery is carried on near shore, the net fishery further at sea. The former supplies the foreign demand, and the latter the home-market, since, from the manner in which the fish are taken by the latter process, they are not so well fitted for curing as by the former.

The nets of the seine fishery are a "stop-seine," with leaden weights at the bottom and corks at the top, to keep it floating, which costs between three and four hundred pounds, being about a quarter of a mile long, and one hundred feet in depth; and a "tuck-seine," which is made with a hollow in the centre, and is half the length, and eighteen feet deeper than the "stop-seine," costing about one hundred pounds. Two boats, of about fifteen tons each, are used, in one of which the "stop-seine" is carried; the other, carrying the "tuck-seine," is needed to aid in inclosing the fish. The third, called the "lurker," from two to four tons burden, is used to carry the men to and from shore, besides being useful to those engaged with the nets. Its crew consists of the master-seiner and three of the men, the rest being equally divided between the other two boats. The fishermen begin their labors towards evening, proceeding to the resort of the fish and anchoring. If a shoal appears, the master-seiner and his men endeavor to ascertain its extent, with other needful conditions. Having determined these, they cast out the net, vast as it is, and with its numerous appendants, within five minutes. The particulars of the several processes following it does not come within our plan to describe: The *result* is, that sometimes two thousand hogsheads, or five millions of fish have been inclosed at a single haul, and ten days may elapse before the whole are conveyed away.

The fishing by drift nets is generally carried on in ordinary fishing boats, occupied by four men and a boy. Often there are as many as twenty nets to each boat, all which, together, may extend three quarters of a mile in length. The fish, on being brought to shore, are taken to the storehouses, where they are salted and ranged in heaps, five or six feet high, and sometimes ten or twelve feet wide. After thus lying five or six days, they are packed into hogsheads. By the appliance of a powerful lever at the top of the hogshead, the oil is extracted, and issues therefrom through holes made for the purpose. This pressing lasts a fortnight.

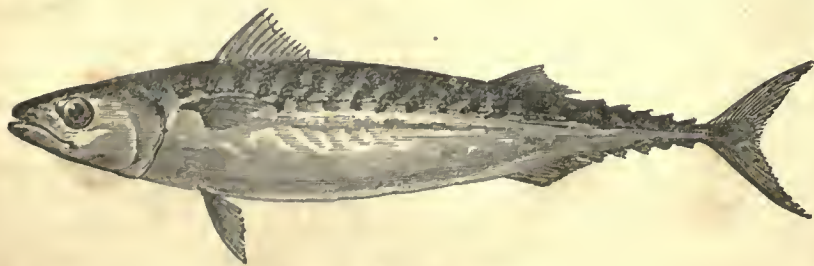
FISHES.



Dutch Auction. Fishermen selling Mackerel at Hastings.

The above print represents a scene, which may often be witnessed at an active fishing town—a Dutch Auction. The mode of proceeding is to divide the fish into heaps, immediately on their being landed; and the persons desiring to purchase being assembled, one of the fishermen or owners of the boat, acts as salesman naming a price above the actual value and at the same time uplifting a large stone, wherewith to “knock down a lot.” A lot, which eventually may sell at forty shillings, is offered for sixty shillings, the salesman rapidly naming a series of lower prices until he gets a “bid,” when the stone is cast on the ground, and so the first bidder becomes a buyer. The descending instead of an ascending scale enables the vendors to finish the business more speedily, and is perhaps the fairest of all methods of selling at auction.

The Mackerel fishery is the liveliest operation of its kind. The flesh of this fish being tender and liable to taint, the greatest dispatch is used in getting it to market. A light gale, gently rippling the water’s surface and named a mackerel gale, is most favorable to the fisherman, who follows his vocation chiefly by night.



Mackerel.



Red Char.



Mackerel.



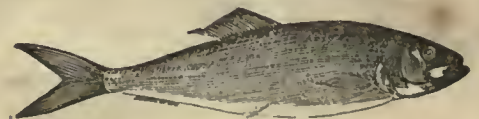
Crew of a French Boat, angling for Mackerel.

The Mackerel, both in shape and tints, is the most beautiful of fishes, while, as food, it is highly prized all over the world. Vast shoals of these fish visit the British coast, and are caught both by nets and lines. The series of nets often exceed a mile in extent, and the number therein taken is incalculable. The fish must be used soon after being drawn from the water, as the flesh is tender and easily tainted by exposure to the air. There are three modes of fishing, with drift-nets, with seines, and with the line. With the line two men will take from five hundred to a thousand fish a day in auspicious weather. The fish bite voraciously and are rapidly caught with a bait cut from its own species, and sometimes even by a piece of scarlet cloth or leather. The seine fishing requires two boats and in many respects resembles pilchard fishing, though on a smaller scale. The drift-net needs no description. The boats employed are generally about thirty feet in the keel; oak or ash built and copper fastened; deep waisted and broad beamed; noted for their durability; and reckoned as swift and safe a class of boats, as can be found in any British fisheries. The Mackerel fishers are obliged to procure a license in order to prosecute their calling.

The Charr generally haunts deep cool lakes and are rarely found at the surface till late in autumn. They spawn in November and December, then proceeding up rivers, preferring those with the rocky channel, and seldom, at other times, leave the lake's depths. They are found in the lakes of England, Scotland and the Tyrol.



Tunny.



Charr.

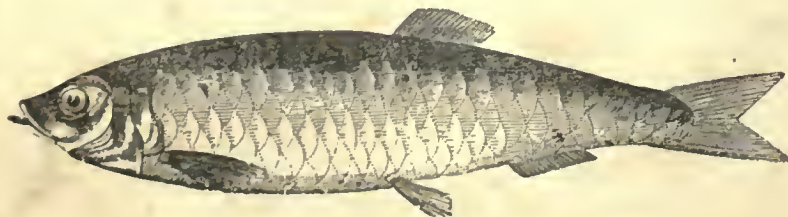


Yarmouth Jetty. Herring Boats returned.

The Herring appears annually, on the northern coast of Scotland, in shoals, five or six miles long, and four or five broad. Their coming is heralded by gulls, and other sea-birds, who hover over the shoals, and depredate incessantly upon them. Yet in spite of the devastations of man, birds, and fishes, the numbers seem undiminished. The fishery is conducted with boats and nets. As the Herring dies at once, on being taken from the water, it must be cured at the first moment possible. The White Herrings are cured in the boats, and the Red are suspended for twenty-four hours over a wood fire on shore, both kinds having first been salted.

The Herring fishery is carried on only during the spawning season, the fish then being in the highest condition. The famous Yarmouth fishery commences about the middle of September, though the season varies on different parts of the British coast. Thus, on the coast of Sutherland, the early fishery begins in June, and the late fishery about the middle of July, and lasts till September. On the coast of Cromarty, large shoals appear as early as May.

The main object of this fishery is to procure Herrings for curing, though in the early part of the season there is a large consumption of fresh Herrings in London, and other cities. The spawning season being over by the last of October, or the early part of November, the fishing then terminates, as the fish are exhausted and leave.



Herring.

The size of the boats used in this fishery depends partly on the distance from shore the fishery is to be carried on, and partly on whether red or white Herrings are to be cured. As the former must be cured on shore, the red Herring fishers must keep within a convenient distance from land. But as the latter may be cured on board the vessel,



Yarmouth Beach Cart, for carrying the produce of the Fishing Boats to the town.

requiring only to be salted and barrellled, and as these fishers may go seaward wherever the fish can be found, this is called the deep-sea fishery, and a larger vessel is needed, than in the former case.

The deep-sea fishery is a more permanent source of profit, than the in-shore, because the earliest and best Herrings are met with, though requiring the larger capital. The vessels must contain sufficient room in the hold for the stowage of salt, nets, barrels and provisions. They lie low in the water, and their sides are furnished with rollers and lee-boards to aid in drawing in the nets.

The Yarmouth vessels are generally of about fifty tons burden, and manned with eleven or twelve men, one fourth of whom are usually landmen. There are two landmen besides, who are employed in boating to and from the vessel, for the curing of Herrings on shore.

The fishing places are from fifteen to thirty miles north of Yarmouth, from thirty to forty-five miles east, and as far south as the mouth of the Thames. The depth of water in such places is from fifteen to twenty fathoms. The Yarmouth fishing vessels are fitted out at a cost of about five thousand dollars each, and are furnished with from one hundred and eighty to two hundred nets a piece, which cost between one thousand five hundred to two thousand dollars; and with six ropes, each one hundred and twenty fathoms long, weighing severally four hundred pounds, and together valued at two hundred and fifty to three hundred dollars. These nets and ropes must be renewed about every fourth year, owing to the destructive effects of the sea, and the ravages of the dog-fish, while attempting to prey on the inclosed Herrings.

There are some varieties in the fitting out and the usages at different fishing stations, but the above notes will give a sufficiently correct general idea of all. The Yarmouth boats continue at sea till they have caught eight or ten "lasts," at thirteen thousand Herrings to the "last," unless obliged to come ashore sooner for provisions. Generally, they are out from three to six days.

As previously stated, the white or pickled Herrings are merely salted and barrellled, and this, while the vessel is at sea. But the curing of red Herrings is much more complex. These Herrings are first sprinkled with salt, in quantities depending on the weather, or the distance from shore. On the average, about one third of a ton is applied to each "last" of Herrings. On being landed, they are carried directly to the "rousing house," adjoining the smoking-house. Here they are again sprinkled with salt, and heaped together on a floor covered with bricks or flag-stones, where they thus remain five or six days, and then are washed, spitted, hung up, and "fired."



Fishermen of the Port of Chioggia, near Venice, preparing to depart for the deep sea fishery.

In both spitting and hanging up, the fish must be carefully kept from touching each other. The spits are round fir-rods, about four feet long, and pointed at one end. The Herrings are suspended on these by the mouth and gills. The spits, when as full as they can be without the fish touching each other, are placed, tier above tier, on wooden fixtures, supported by joists, till the house is full. The distance from the tails of the lowest tier to the floor is about seven feet. Wood fires are then kindled, and it requires great care to manage these properly. They must be neither too quick nor too slow, and at times must be extinguished. Green wood is commonly used, and a large quantity being required, the expense is considerable. Oak and beech are believed to impart the finest color and flavor, but ash, birch, and elm are used with them. The wood of fruit trees, as also some other woods, would communicate to the fish a bitter taste.

The smoking process occupies three weeks, when intended for home consumption, as they are preferred when soft and not too much dried, but those for exporting are subjected to the operation for twenty-eight or thirty days. The fires are then extinguished, and the house having cooled, the spits are taken down, and, a few days after, the fish are barrelled. The barrels are commonly of fir, though sometimes of oak, or other hard wood.

In an abundant season, the curers take some pains to divide the fish of different qualities into different lots. They are commonly distributed into four classes. The large and well formed constitute the first quality, and are named "bloaters." These being removed, the best of the residue make the second class. Those which are broken in the belly, or will not absorb the salt, but turn white, are the third division, and the fourth consists of those, which are headless, or will not hang by the gills, but are suspended on tenter-hooks by some other part.

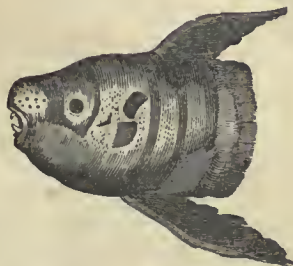
FISHES.



Platax Vespertilio, or Bat Chaetodon.



Diodon, or Sun-fish.



Diodon, or Short-Sun-fish



Polypus.

The *Platax Vespertilio*, or Bat Chaetodon, is found off the coast of Ceylon, it has a very compressed body, a large, vertical back-fin, brownish-hued, with the anterior spines almost concealed in the membrane, long ventral fins, and with trenchant front teeth, each three-pointed. It grows to a large bulk, and generally inhabits deep water.

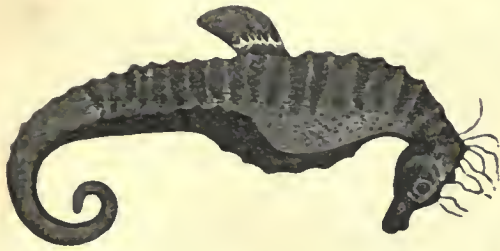
The Short Sun-fish is named from the curious structure of the jaws. It has often been caught on nearly all parts of the British coasts. It is singularly shaped, looking like the head and shoulders of a very large fish, from whose entire body three-fourths had been cut off. It has been known to weigh three hundred pounds, while but four feet five inches long. It lives chiefly at the bottom of the sea, but occasionally rises to the surface, when the sailors kill it with a harpoon, and eat it. Another variety is distinguished by having a longer body.

The Polypus, in structure, may be likened to the finger of a glove, open at one end and closed at the other. The closed end represents the tail, by which the animal fastens itself to the substance it chancs to be upon, and the open end the mouth. If we conceive six or eight small strings issuing from this end, we have an idea of its arms, which it lengthens, contracts, and erects at will, as a snail does its horns. The animal is very voracious, and uses his arms as a net to catch whatever small animals comes within reach. Lengthening these arms several inches, and keeping them apart, it occupies a large space in the water. So exquisite is their sensibility, that if a small insect touches one of them it closes about him, the other arms come to help, and the creature is drawn into the Polypus's mouth and swallowed.

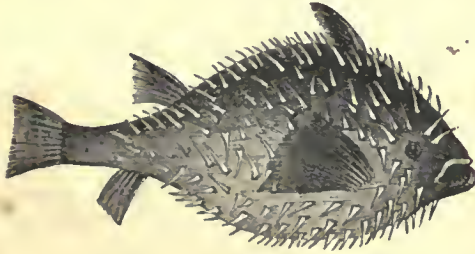
With the microscope, the body of the old Polypus is seen covered with minute Polypuses, which cast their tiny arms abroad, like the parent, for prey, and this prey apparently nourishes at once old and young. And stranger still, these young, while still attached to the parent's body, have young ones springing from themselves, and the food, caught by one, serves to nourish successively all the rest! But, most wondrous of all, cut a Polypus into minute pieces, and each piece soon becomes a distinct and complete animal, so that destruction is but the generator of new forms of life!

The animals belonging to this extensive and remarkable class; possess an organization so low in the scale of being, that there is very considerable difficulty in distinguishing many of them from the cryptogamic families of the vegetable kingdom.

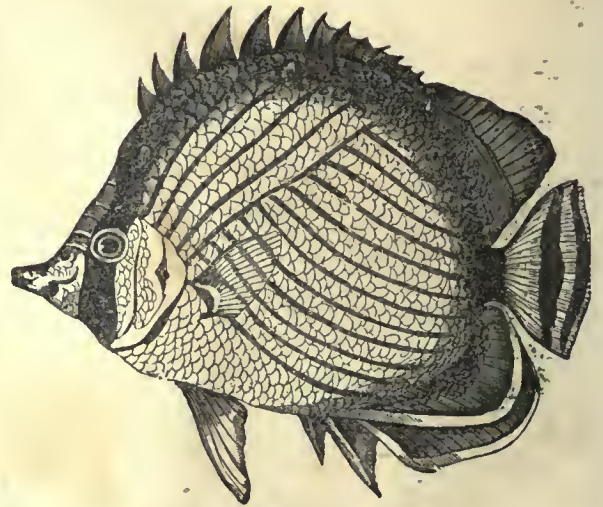
FISHES.



Hippocampus.



Sea Porcupine.



Chætodon Vagabundus.

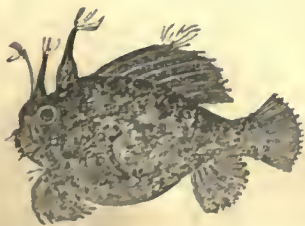
The *Chætodon Vagabundus* inhabits the coasts of Ceylon. It has a body of a pale yellow color, with numerous oblique, brownish purple lines; the back fin is blackish, and has thirteen spines; the tail fin is yellow, with two black bands, and the anal fin is blackish, with a curved, longitudinal band. Its length is from six to twelve inches. It feeds on insects, which it procures in a singular manner. Observing some insect on a weed, or hovering over the water, it ejects a small drop through its tubular snout with such precision as often to disable the little creature, so that it falls into the water and is devoured.

The *Hippocampus*, or Sea-horse, is thus named from its fancied resemblance, in some points, to the horse. It seldom is more than ten or twelve inches long. It is brown, streaked with white and black, and dotted, and compressed at the sides.

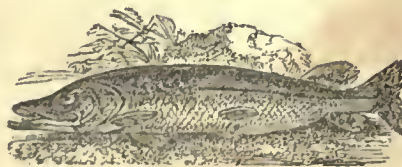
The *Sea Porcupine* is covered with spines, which it can erect at will, and has within it an air-bag, which, when angry, it inflates so as to present the form of a large air-ball, armed at all points. It is from seven or eight inches to two feet in length. It is found on the Guinea coast, and in the Indian ocean.

The *Electric Eel* inhabits the fresh water rivers and ponds of South America. It possesses the power of emitting, at will, an electric shock. When fish come near it, they are instantly struck dead, and then devoured. So powerful is the stroke, that a strong man has been knocked down by it.

The *Angler* is very common in all the European seas. Owing to the peculiar formation of its pectoral fins, it can crawl some way on land. On its skull are two elongated, bony appendages, capable of being moved in any direction. It couches on the bottom of the sea, stirs up the mud with its fins, and agitates its skull-pendants. The small fishes mistaking these pendants for worms, come to seize them, and are themselves seized and devoured. It is very voracious.



Angler.



Pike.



Electric Eel.

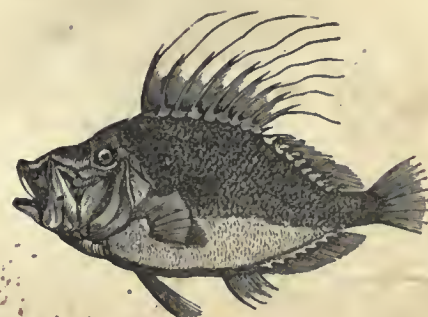
FISHES.



Lump Sucker.



Devil Fish.



John Dory.

The Sea Devil, or Fishing Frog, is a hideous looking creature, growing sometimes seven feet long, and resembles a huge tadpole, its head being much larger than its whole body, with a mouth of a yard wide, and the under jaw longer than the upper. The fishermen, nevertheless, have a regard for it, on account of its enmity to the voracious dog-fish, and whenever they chance to take it alive, they set it at liberty. There are long filaments rising from the head, which it uses as fishing lines. These float, like worms, on the water above the animal's lurking place, and the young fishes mistakingly seize them, and are sucked in by the hidden monster.

The John Dory abounds on the coasts of Cornwall and Devonshire, and is supposed to derive its name from the French *doree*, or golden, in allusion to its golden yellow color. It is the theme of some strange traditions, one being that it was this fish from whose mouth St. Peter took the tribute money, after catching it, by command of Christ.

The Lump Sucker is about sixteen inches long, and weighs about four pounds. The shape of the body is like that of a bream, deep, and it swims edgewise; the back is sharp and elevated, and the belly flat; the lips, mouth, and tongue of this animal are of a deep red; the whole skin is rough, with bony knobs; the largest row is along the ridge of the back; the belly is of a bright crimson color; but what makes the chief singularity in this fish, is an oval aperture in the belly, surrounded with a fleshy, soft substance, that seems bearded all round; by means of this part it adheres with vast force to any thing it pleases. If flung into a pail of water, it will stick so close to the bottom, that on taking the fish by the tail, one may lift up pail and all, though it holds several gallons of water. Great numbers of these fish are found along the coasts of Greenland in the beginning of summer, where they resort to spawn. The roe is remarkably large, and the Greenlanders boil it to a pulp for eating. They are extremely fat, but flabby and insipid.



Sword Fish.



Hammer-headed Shark.



Spearing Fish.

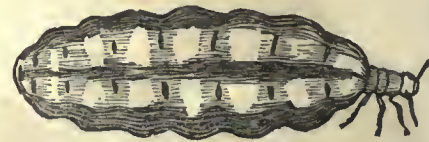
INSECTS.



Ephemeroidea.



Honey Bees.



White Ants.

ALL the animals hitherto described come under the sub-kingdom called *vertebrata*. The next division, or sub-kingdom of the animal kingdom is styled *articulata*, and includes *insects*, *crustacea*, and some other inferior classes.

The *articulata* derive their name from the jointed character of the skeleton or hard portion of the structure, and the inclosure of the whole body by this. And this skeleton not only incloses the body, but is prolonged over the appendages for locomotion, where they exist, and the portions of it covering these, are also jointed to give them the requisite flexibility. In the lowest animals of this series, where there are no appendages for locomotion, but all movements are effected by the body itself, the latter is extremely flexible, and the whole envelope so soft, that the division into segments can scarcely be detected. Such animals are the leech, and earthworm, whereas the jointed character is most apparent in the centipede tribe, where the segments are all of nearly the same size, and where each has a short pair of legs, themselves also jointed.

The *articulata* are nearly always of small bulk, and the chief portion of their bodies is made up not by their nutritive and digestive apparatus, but by the muscles moving it. Being designed for atmospheric respiration, their breathing apparatus is constructed on a principle opposite to that of fishes.

The number of classes of the *articulata* is very great, being thus distributed according to certain general peculiarities of conformation and habits. Each class is divided into several orders, and each order, again into several species, each division being distinguished from the rest by certain marks, more or less plainly discerned. We shall speak very briefly of the most important of these varieties.

The class, insects, is one of the most interesting in the whole animal kingdom, in regard to the number, beauty, and complexity of the forms embraced therein, the immensity of individuals of the same species often appearing together, and their resulting importance in the economy of nature. One of the most interesting marks, distinguishing this class from all others, is the metamorphosis, or complete change of form, undergone by them during their development. The whole process, whereby an unsightly worm becomes a brilliant butterfly, or some other creature, bearing not the remotest resemblance to the original, is very curious and wonderful; but we have here no space to describe it.

Insects, in their perfect state, transcend all other creatures in their powers of locomotion. Their senses appear to be acute. Their eyes are large, often formed by the union of several thousand small ones. They are believed to possess hearing and smell, and certainly have somewhere a most delicate touch, whereby the social tribes seem to communicate with each other. They feed upon almost all organised substances, some tribes being purely carnivorous and others herbivorous and are found abundantly in all regions of the globe. Their sub-divisions are formed chiefly by their curious wings, which consist of a double layer of membranes protracted from the skin covering their body and partaking of its properties.

The principal orders, into which this class is distributed, are eight, besides several small orders intermediate between the main groups. Each of these orders is also subdivided into sundry species, which are finally distributed into families. Such is the method adopted by scientific treatise on this branch of knowledge. We shall follow a simpler method, merely pointing out characteristics of the individual described, without attempting to specify the sub-division, to which it belongs.

The Ephemeroidea take their name from the brief duration of their lives in their perfected state. As larvæ they exist for two or three years, and in both this and the pupa state they live in the water, burrowing



Death's-head Moth.



Lantern Fly.



Dynastes Hercules.

the banks. At the time of their last change they quit the water, cast their skin and appear in a new form. But, singularly, they must again doff their skin, before being competent to propagate. At sunset, on fine summer and autumn days, they appear along the margin of the waters, wherein they were developed. After their second moulting they never eat, and as the propagation of their kind is their only object, they die soon after it is performed, often in a few hours after leaving the water. Hence their name, "for a day."

The White Ants are land animals, carnivorous or omnivorous through all their stages. The sexless individuals in these communities are mere soldiers, while the so named workers are larvæ, which, except being wingless, closely resemble the perfect animal. Being excessively voracious, they commit terrible ravages. They live in large nests, above ground, their buildings being channelled with connecting galleries throughout. The workers imprison the females in the centre of the nest, where the abdomen reaches a monstrous size from the quantity of eggs it contains, and the soldiers maintain careful guard.

The Hive Bee, with which all are more or less acquainted, are a social race, with regular government, and famed for constructive talent. Each society has but one female, the queen, several hundred males, called drones; and about twenty thousand working bees, which are sexless. The latter build the hives, construct the combs, secrete the honey, and in a word, do all the work of the establishment. The honey finds its way out of the abdomen of the workers in little scales, which being taken up and kneaded by the jaws, is then put in the proper place. The drones are killed at the close of summer, but the queen and workers remain and go on with their labors in the following season. On the hive becoming too populous, they send forth colonies.

The Dynastes Hercules, a native Brazil, is five inches long, and most remarkably formed, having an enormous horn, toothed on the inner edge, projecting from the head, which is matched by a corresponding protuberance from the thorax. Its back is marked with black spots on a white ground.

The Lantern Fly is thus named from its possession of a luminous property, which is supposed to exist in a curious prolongation of the fore head, which sometimes equals in size all the rest of the body. It is found in Brazil, Guiana, and China.

The Death's-head Moth is so named from a skull-like patch on the back of the thorax, which emits a squeaking sort of sound, produced by means as yet unknown. When appearing in large numbers, its peculiar aspect has caused such appearance to be counted ominous. It is a great enemy to bees, it enters their hives, devours the honey, and terrifies the inhabitants to flight.

The Scorpio Occitanus has a large development of the palpi, which form extended arms, terminated by a pincer, or claw. The whole body is clothed in a hard skin; the abdomen is much prolonged, so as to form a sort of tail, and this tail is terminated by a sting furnished with a venomous secretion.



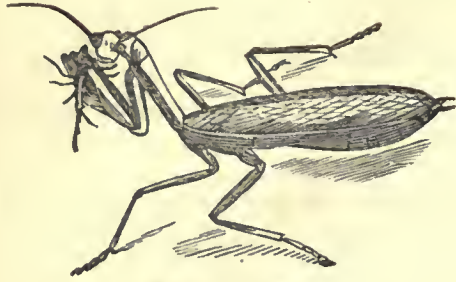
Queen Bee.



Scorpio Occitanus.



Drone Bee.



Mantis Religiosa.



Callichroma.



Carabus Clathratus.

The *Carabus Clathratus* is one of the numerous race of Beetles, living exclusively on land. Its body is hard, so that it is enabled to creep under stones, through fissures, beneath the bark of trees, &c., in quest of the insects on which it preys. Its body is elongated, its eyes prominent, and its jaws terminate in a sort of hook. It has, for its means of defence, the power of exhaling a very fetid odor, and to project from its abdomen, to a considerable distance, an acrid fluid capable of producing much irritation. It is one of the *social* Beetles.

The *Scarabæus*, which was the sacred Beetle of the Egyptians, feeds chiefly upon the excrements of various animals, and incloses its eggs in balls of the same, which it rolls along with its hind feet, until it reaches the hole, where they are to be deposited. Its antennæ are curiously shaped, having the appearance of a crescent-formed comb, with the teeth on the inner edge, and its back is covered with a shield-like plate.

The *Callichroma Moschata* is remarkable for the length of its antennæ, which are often much longer than its body. It is a vegetable feeder, and does great injury to plants, some attacking the leaves, and others the roots. It is about one inch long, entirely green, or shaded with blue, and exhales a pleasant, musky odor. It is very common on the willow.

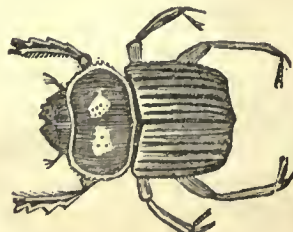
The *Mantis Religiosa* is a strange-looking animal, having a narrow and elongated body, and long, strong legs, furnishing powerful instruments of attack. It sometimes assumes the attitude of prayer, and on this account is regarded with superstitious reverence by the natives of the countries it inhabits. This posture, however, is that in which it lies in wait for prey. It is excessively voracious, and if two are kept together foodless, they will fight, the victor devouring his conquered opponent.

The *Bocydium Globulare* and *Bocydium Cruciatum*, which are Brazilian species have, as here represented, curious appendages, resulting from an extraordinary development of the upper part of the thorax. They are often beautifully varied in their colors, and are even found on trees and among plants, on the juices of which they feed.

The Flea is a blood-thirsty, troublesome creature. Its body, oval and compressed, is covered with a black, shining, bristly shell; the head is small, with large eyes; the mouth contains a cylindrical proboscis, which perforates both human and animal skin; its legs are stout, the hind ones being specially fitted for leaping, so that at one bound it will clear two hundred times the diameter of its body.

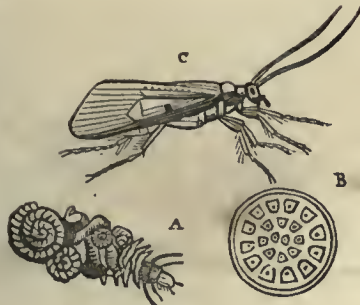


Bocydium Globulare, and Bocydium Cruciatum.



Scarabæus

Flea.
(352)



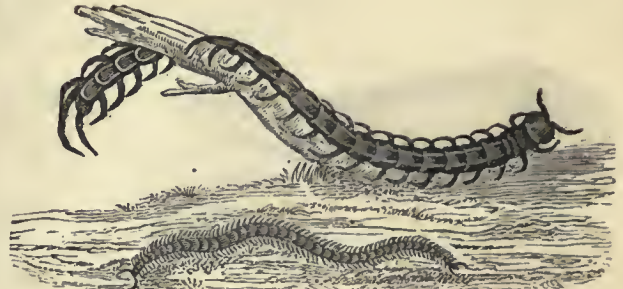
Phryganea Grandis.



Podura Villosa.



Mite.



Centipede, and Millipede.

The Phryganea Grandis, in its larva state, resides in a cylindrical case, open at each end, to which it attaches sticks, weeds and pebbles, by silken threads, which it spins from its mouth. This case it bears about with it, never voluntarily quitting it. When about to assume the pupa state, it fastens its case to some solid substance under water, closing both ends of the case with a sort of grating, which admits the water necessary for breeding. When nearly arrived at their perfect form, they make their way out with a pair of hooked jaws, then furnished them, and swim about very actively by means of the two hind legs. The food of some is vegetable, while others prey upon smaller creatures of their own race.

The Podura Villosa is the name of a small animal, whose most distinguishing mark is that its abdomen is prolonged into a somewhat long, elastic, forked tail, by means of which the creature can execute the most astonishing leaps, from which conformation the race are vulgarly called *spring tails*. There is also a species of mane on the neck, and two plumes rising from the top of the head.

The Myeale Fodiens, or Mining Spiders, found in southern Europe, construct on dry, shelving localities, exposed to the sun, subterranean, cylindrical galleries, often two feet deep, and so winding, that their traces are lost. They line these with a silken tube, forming at its entrance a movable lid, composed of silk and earth, and attached to the silken lining by a sort of hinge. This is adapted, by its size, situation and weight, to close the aperture so exactly, as hardly to permit its entrance to be distinguished from the neighboring soil. When the Myeale enters this retreat, or leaves it, the door shuts of itself. This spider spins a cocoon round its eggs, inclosing a hundred or more. These are hatched within it, and sustain their first changes before quitting it.

The Centipede, so named from its having a hundred feet, is found in many parts of the world, but is common within the tropics. The largest, which are the East Indian, are about six inches long, of a ruddy color, and as thick as a man's finger. They have many joints, and from each joint a leg on each side; are covered with hair, and apparently eyeless; but there are two feelers on the head, which subserve the purposes of eyes; the head is round, with two sharp teeth, wherewith they inflict painful and dangerous wounds.

The Millipede differs from the Centipede in having a far greater number of feet. Some are smooth and others hairy; some are yellow, some black, and some brown. They are found between the wood and bark of decayed trees, as also among moss-covered stones. Whatever their qualities in the tropics, in Europe they are harmless.



Dytiscus Marginalis.
(353)

The Dytiscus Marginalis is an aquatic Beetle, which passes its larva and perfect states in placid, fresh waters, such as lakes, pools, and ditches, except during its metamorphosis, which occurs on land. Its larva preys upon other aquatic larvæ, moving swiftly through the water, and striking them with its expanded tail. The pupæ are found buried in the neighboring banks. Its larvæ have a long, narrow body, with a strong head, armed with powerful mandibles, and they are of extremely active, carnivorous habits.

INSECTS.



Leech.



Mygale Fodiens.



Grasshopper.

The *Acarus Domesticus*, or Mite, is a very numerous tribe, and so minute as to be nearly microscopic. They wander under stones, leaves, the bark of trees, or upon articles of food, while others live as parasites upon the skin, or in the flesh of animals, often greatly weakening them by their excessive multiplication.

The Grasshopper (so named among us) is a small animal, of the color of green leaves, save a brown line streaking the back, and two pale lines under the belly, and behind the legs. It may be divided into head, corselets and belly. The head is oblong, in its vertical direction, and somewhat resembles that of a horse. Its mouth is covered by a sort of round buckler jutting over it, and armed with brown teeth, hooked at the points, and containing a large, reddish tongue affixed to the lower jaw. It has long, tapering horns, and the eyes are like two little, prominent black specks. The corselet is elevated, narrow, armed above and beneath with two serrated spines. The back is armed with a strong buckler, to which the muscles of the legs are firmly bound, and round these muscles are seen the creature's breathing vessels, snowy-white. The last pair of legs are much longer and more muscular than the first, and admirably fitted for leaping. It has four wings, the hinder being much the larger, and the chief instruments of flight, and a forked, down-covered tail, and three stomachs. It begins to sing soon after getting its wings, the male only having this power, and this song is an invitation to courtship. The female deposits her one hundred and fifty eggs in the ground at the close of autumn, and soon after dies. Neither male or female survives the winter. Their food is vegetable.

The Leech is an aquatic animal, and lives on blood. Its mouth is located in the middle of the cavity of the anterior sucker, with three little jaws so disposed around it, that the three edges form the radii of a circle. Each of these has, at its edge, two rows of very minute teeth, presenting the appearance of a small semicircular saw. By the action of a muscle at the base, this saw is so worked as to cut into the skin, a sawing movement being given to each piece separately. The lacerated character of the wound, thus occasioned, is very favorable to the flow of blood, which is further promoted by the vacuum created by suction. Most Leeches are inhabitants of fresh water, though some are found only in the seas. The medical uses of this animal are well known.

The Tarantula is the largest of European Spiders, and a native of Italy. It is three fourth of an inch long, and as thick as one's little finger; its color is generally an olive-brown, varying to one more dusky; it has eight legs and eight eyes, and sharp, serrated nippers, between which and the fore-legs are two little feelers, which move briskly on the animal's approaching its prey. Its body is covered with a soft down, and it is oviparous. In summer it bites the mowers and field workers, but in winter lurks in holes and is rarely seen.



Garden Spider.



Squilla Mantis.



Tarantula.

INSECTS.



House Cricket.



Limulus Polyphemus, or King Crab.



Blaps Mortisaga.



Whale Louse.



Garden Spider.



Locust.



Stag Beetle.



Dragon Fly.

The Squilla Mantis is entirely marine, and found abundantly in the Mediterranean. It has powerful claws, which it uses for seizing its prey. Its gills are affixed in separate tufts to certain appendages of the abdomen.

The Garden Spider, like all others, has two divisions in its body. The fore part, comprising the head and breast is separated from the hinder part of the belly by a slender thread, which connects the two parts. The fore part is covered with a hard shell, as well as the legs, while the hinder part is enclosed by a supple, hairy skin. It has eyes all around the head, brilliant and keen, and two pincers on the fore part of the head, rough, saw-toothed, and terminating in claws like a cat's. Just below the point of the claw is a small hole, through which the creature emits a poison, which, though harmless to us, instantly destroys its prey. It has other weapons of offence. Feeding on flies, and itself wingless they would escape, had it not other means of self-help. Nature has supplied it with a mass of glutinous matter within its body and five teats for spinning a thread out of this. It thus makes a web, where flies are wont to come, and provides food in abundance.

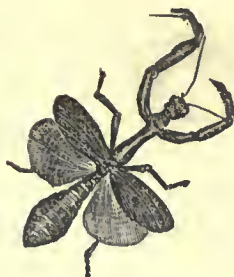
This description applies equally to the House and Garden Spider. The latter, however, works out of doors instead of within doors. It spins a large quantity of its thread, which, floating in various directions, sticks, from its glutinous quality, to some high plant or tree. The line being thus fastened, the Spider passing down and up the same, till it has made it strong enough. Then walking along this line to a certain point, here fastens another, and dropping thence to the ground it fastens to some solid body below. In this way it goes on spinning till it has completed a web nearly square, within which it resides and watches for whatever insect may get entangled therein. It is said, that some times it waits for weeks before entrapping a single fly, for this, like many other insects, is extremely patient of hunger. When some insect gets entangled, the Spider, waiting to ascertain if it be completely meshed, walks forward, instils its venom and kills it. This Spider is oviparous, the female laying from nine hundred to a thousand eggs in a season.

The Blaps Mortisaga has an ashy-brown or black body and is wingless. It is a land animal, a vegetable eater and a frequenter of dark places. It is very tenacious of life and has been known to live six months foodless and transfixed by a pin. It is often found in dark, filthy places in and about our dwellings.

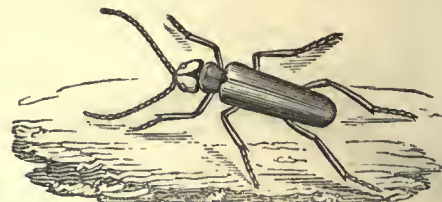
The Whale Louse takes its name from its infesting the certacious tribe, as a parasite. These agreeable creatures are sometimes so abundant on the surface of the whale, that the latter may be distinguished, at some distance, by the white color they impart to him.



Scorpion.



Common Locust.



Cantharis, or Blister Beetle.

The *Simulus Polyphemus*, or King Crab, is found in the neighborhood of the Molluccas, and on the coast of America. It sometimes attains the length of two feet. Its legs are very short, the anterior apparently conveying food to the mouth, and the posterior adapted to respiration.

The House Cricket greatly resembles the Grasshopper in shape, voice, leaping, and method of propagation. Its color is of a uniform rusty brown. It lives in the crevices about the fire-place, the smallest serving it for shelter, and where it once lodges, it is sure to propagate. These creatures chirp the year round, chiefly during the night, when they emerge from their holes. They are omnivorous, as well as very voracious, feeding on meat, flour, bread, and especially sugar. They have also a great propensity for liquids, and are often found drowned in milk vessels.

Dragon Flies are of several species, all which, however, agree in their main characteristics. The largest are from two to three inches long. Their body is divided into eleven rings; the tail is forked; their eyes are large, horny, and transparent; their four wings are large and transparent, and always lie flat, while they are at rest; their colors are varied and brilliant, green, blue, crimson, scarlet, white, and black.

They are produced from eggs dropped in the water, and the larvæ are water worms, with six feet, which, from their voracity, have been called the crocodiles of water insects. This voracity marks also the perfected animal, which has been seen to devour three times its own bulk in a single hour. It preys on all kinds of insects, from the smallest up to the, wasp, hornet, and butterfly.

The Locust, which from immemorial time, has been a terrific scourge alike of Asia, Africa, and Europe, is called the "Great Brown Locust," and is supposed to have originated in Africa. It is about three inches long, and has two horns, or feelers, an inch in length. The head and horns are brownish, while about the mouth and on the inside of the larger legs it is blue. The shield covering the back is greenish; the upper side purple. The upper wings are brown, with small dusky spots, with a large one at the tips, the under wings are more transparent, and of a light brown, tintured with green, but with a dark cloud of spots near the tips. Such is the animal so truly terrible in its birth-place, the east, as often to be employed in Scripture, as an image to portray what is most destructive and desolating. But it has often visited Europe also, especially its southern sections, and its ravages have there, too, been most appalling. i

When these creatures set forth on an expedition, they go in multitudes, literally numberless, with a leader at their head, whose guidance they follow. When they light upon a district, they completely devour every green thing, leaving the trees above mere skeletons, and the ground beneath a naked waste. In this way a famine is often produced, especially in Europe, where vegetation once destroyed, cannot as in tropic climes, renew itself till the coming of another spring. No animal on earth multiplies so rapidly as this, if the sun be warm and the soil holding its eggs be dry.

Still more formidable, however, than even the great Brown Locust, is the great West India Locust, which is about as large as the barrel of a goose-quill, with a body six or seven inches long, and divided into nine or ten joints. It has two small eyes, standing out like crab's eyes, and two feelers, like long hairs. The whole body is studded with excrescences, not much bigger than pin-points; is of a roundish shape, decreasing in circumference towards the tail, which is divided into two horns. Between these is a sheath, containing a small, dangerous sting, which is infallibly darted into any person, who chances to touch this insect. The wound produces a universal shivering and trembling which, however, may soon be stopped by rubbing it with palm oil.

INSECTS.



Earwig.



Stag Beetle.



House Spider.

The Cantharis, or Blister Beetle, is the animal of which are made cantharides, popularly called Spanish Flies, which are employed by physicians in raising blisters, as well as otherwise. These creatures have feelers like bristles, flexible wing-cases, and wrinkled sides to the belly. They vary from each other in size, shape, and color, the length in England being about an inch and the circumference the same. They are all brilliantly beautiful, being, variously, azure or gold-colored, or a mixture of the two.

They are chiefly natives of Italy, Spain, and Portugal, but also found about Paris. Their scent is extremely offensive, and furnishes guidance to those in quest of them.

To prepare the cantharides, the animals are caught, and tied up in a bag, and then killed with the vapors of hot vinegar; after which they are dried in the sun, and deposited in boxes. They are now ready for use.

The Scorpion has an elongated body, somewhat resembling a lobster's, terminated by a long, slender tail of six joints, the last of which forms a pointed sting, whence is ejected a poisonous fluid, secreted by small glands, and collected in a bladder near the tail. They have eight legs, the two hindmost supplied with forceps, with which they seize their insect prey.

The Stag Beetle is the largest of British insects. While in the main particulars of its structure, resembling the other varieties of its class, it is distinguished from them by what are called its jaws, two enormous quarto-circular projections from the fore part of its head, toothed on the inner edge like a comb, or rather, like a saw, two of these teeth on each projection being, perhaps, four times the length of the rest. And yet, though so formidably armed, it is a harmless creature, and uses this fearful-looking instrument only to break the tender bark of trees, that the sap it feeds upon may exude. Its mouth is very small, and is supplied with a brush, with which it licks up the food. During the winter it hides in the earth, making for itself a cave very smooth inside.

The Earwig is thus named from the fable of its entering the brain by the ear and causing death. It abounds in cool, and in damp places, collecting in troops under stones, and on the bark of trees. They are very injurious to ripe fruits, and even devour their dead companions. Their limbs are suited only for running; their wings, which are large, and plaited like a fan, are folded transversely under very short, crustaceous wing-cases. They are said to sit upon their eggs, hatch them, and then tend their young with apparent affection, and gather them under their wings, as the hen does her chickens.



Butterfly.



Rhinoceros Beetle.



Butterfly.



Glow Worm.



Ichneumon Fly.



Gadfly.



Common Fly.

The Glow Worm has been celebrated, in all ages, for the light it emits, by night, from itself. The male and female differ from each other almost as much as though belonging to different races. The male is completely a beetle, having wings and wing-cases, and flying in the air at will, while the female is wingless, and is, in all respects, a creeping insect. The body of the female has eleven joints, with an oval breast-plate, her head being over this, and very small. She alone is luminous, and it is supposed she is thus endowed in order to attract her male companion.

The Common Fly is of an ashy-grey, with four black streaks upon the upper part of the back, with the hinder part of blackish-brown, spotted with black below, and yellowish-brown above. The larvæ are bred in dung, carrion, and fish, and the pupæ lie parallel to each other. On the approach of winter they get benumbed, or what is called blind, before they disappear. They are most troublesome, disagreeable animals in the warm season, attacking all articles of food, defiling mirrors, ceilings, paintings, and every thing they can reach, and irritating ourselves to the verge of endurance by their incessant assaults upon every exposed part of our persons.

The Ichneumon Fly has a long, slender, black body, four wings like the bee, and a three-forked tail, consisting of bristles; the two outermost black, and the middle red. It takes its name from the little quadruped so destructive to the crocodile, as it strongly resembles that in its courage and rapacity.

Though this three-forked instrument is apparently slender and feeble, yet it is really a powerful and efficacious weapon. There is hardly any substance which it will not pierce; it is the weapon of defence, it is used in destroying prey, and still more, by it the animal deposits her eggs wherever she chooses. The last named being its chief use, the male is not provided with it.

All flies of this kind are produced in the same way, owing their birth to the destruction of some other insect, within whose body the egg was deposited, and upon whose vitals the young fly feed, till arrived at maturity. There is no insect whatever, which the female Ichneumon will not attack, in order to leave this fatal deposit within its body, even the spider, himself, so feared by other insects.

The Gadflies resemble large, thick-haired flies, furnished with a sort of proboscis, and short antennæ, and the feet, in some species, are terminated by two hooks. They take no food, and have a very brief existence, but when they appear in clouds, the cattle instantly fly, and strive by every possible means to get rid of them, as they often cause serious disorders.

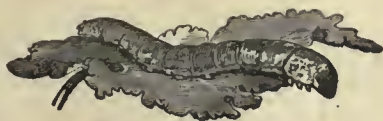
The Gadflies deposit their eggs in the nostrils or under the skin of herbivorous animals, where they occasion tumors, in which the larvæ are bred, and upon the pus of which they feed. When full fed, they drop on and enter the ground, where they are changed into an oval, hard pupa.

The *Oestrus Equi*, or Gadfly of the Horse, is distinguished from other *Oestri* by the smoothness of the thorax and by the equi-distance of the eyes from each other in both sexes. It is nearly half an inch long; with gauze-like yellow and brown wings, with chest of a rusty color on the sides and a yellow tinge posteriorly; with belly of a reddish-brown above and dirty-grey below; and with extremity almost black. The whole insect is thickly covered with down.

The Gadfly is seen, in the latter part of summer, very busy about horses; this is the impregnated female depositing her eggs. She selects some part of the horse, which he can reach with his tongue, and which he often licks, and drops upon it from fifty to one hundred eggs, which adhere to the hair by a glutinous substance surrounding them. Having thus exhausted herself, she slowly flies off, and soon dies.



Diamond Beetle.



Caterpillar.



Hercules Beetle.



1. The female of the *Oestrus equi* nearly double its natural size.
2. The eggs, also magnified, deposited on and adhering to the hair.
3. The bots—one-half of their natural size—adhering by their testacula, or hooked mouths, to the cuticular portion of the stomach. Some of them are supposed to be recently detached, and the excavations which they had made in the cuticular coat are seen.
4. The full-grown bot detached.
5. The *Oestrus ovis*, or gad-fly of the sheep.

In two or three days, these eggs are mature enough to be hatched. The horse, feeling some uneasiness from this glutinous matter sticking upon the hair, licks the spot, and by the pressure, together with the warmth and moisture of the tongue, the eggs are burst, and a small worm issues from each, which, adhering to the tongue, is carried down into the stomach, and by means of a hook on each side of the mouth, fastens itself to the insensible coat of that organ. Scooping out a little hole and plunging its muzzle into it, there remains till the ensuing summer, feeding on the mucus and other matter belonging to the coats of the stomach.

It has now become an inch long, and proportionally large, and is ready to undergo its transformation. It loosens its hold, falls into the digesting mass contained in the stomach, passes through the intestines, and is discharged with the dung. It then speedily burrows in the ground, and so soon as a proper habitation is hollowed out, a shelly envelopment gathers round it, and it appears as a pupa, or chrysalis.

Having remained here torpid, for a few weeks, it bursts from its prison, a perfect fly, identical with that with which we begun our description, seeks its mate, and having completed the act of fecundation, dies. The female deposits her eggs and dies also. It is the larvæ of this fly which is popularly called Bot. The stomach of the horse is commonly covered with them. Ordinarily they do this animal no injury. Occasionally they do harm, as when, by mistake they fasten on the upper part of the windpipe, thus producing a cough beyond the alleviation of medicine, or get into the first intestine, and so irritate and choke it as to destroy the horse. These, however, are mere exceptions. That a horse's stomach should contain a large number of bots, is according to the order of nature, and if the animal be otherwise healthy, it is very rare, that even their presence is known by any perceptible tokens.

The *Oestrus Ovis*, or Gadfly of the Sheep, is more formidable. It is smaller than the *Oestrus* of the Horse, and its body is dark-brown, spotted with white. It is often seen in copses and on rails in the vicinity of a copse. It abounds most in June and July, and is sometimes an intolerable nuisance in woody regions. It is a great terror to the Sheep, the sight even of one throwing the whole flock into commotion.

The fly strives to reach the inner margin of the sheep's nostril, and darting upon it with lightning-speed, deposits an egg. The moist warmth of the part soon hatches it, and a little worm escapes. This creature creeps up the passage and finds its way to some of the sinuses connected with the nose. The irritation caused by it, in crawling up the nose, would seem severe, since the sheep acts as though half-maddened. Having reached some cavity near the root of the nose, the worm fastens itself to the membrane by its two mouth-hooks, and these remain till the following April or May. There are rarely above three or four of these bots in one sheep.



Silk Worm.

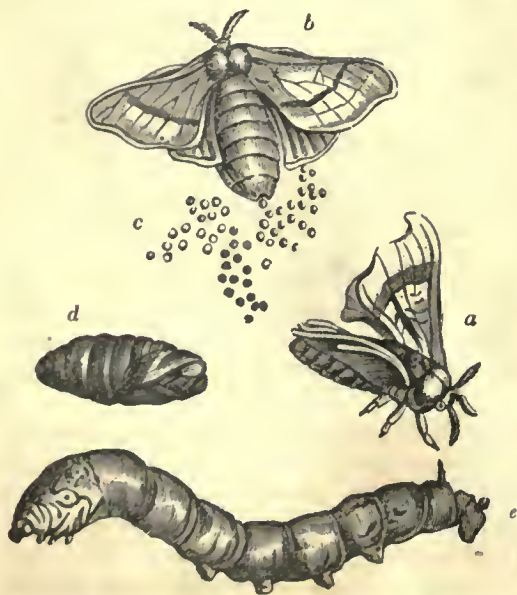
Chrysalides.

Cocoons of the Silk Worm.

The Silk Worm, the most valuable of all the moths, has no pretensions to beauty. The wings are whitish, with two or three obscure and brown streaks, and a crescent-like spot, on the superior pair. Its eggs are of a straw color, and each about the size of a pin's head. Its larva, known by the name of the Silk Worm, when first produced, is extremely small, and entirely black, and changes its dress before it assumes the chrysalis state. In this state it commences spinning a cone or cocoon of silk thread, in which it envelopes itself, and though weighing two grains and a half, the thread measures nine hundred feet. Here it continues about twenty days, till it undergoes its final transformation, when, by an effort at that part of the cone which is always left thin and is easily broken, it emerges from its silken palace to revel in the light and life of an aerial existence. This wonderful insect is found in a native state on the mulberry trees in the northern provinces of China, whence it was introduced to Europe in the reign of Justinian by the Greek missionaries. Some of the first Crusaders brought it from the Morea, and several centuries afterwards it was cultivated in France under the administration of Sully. The art of manufacturing silk was known to the ancients. Pliny says, the cocoons were first unwound and woven by Pamphila, a woman of Coos, the daughter of Lateus. When it was introduced into England is not certain, but Queen Elizabeth had a pair of black silk stockings presented to her, in the third year of her reign, which she said was "a marvellous delicate wear,"

and would never after use stockings of any other fabric. A characteristic anecdote is told of James I. of England, whilst King of Scotland. Having observed the Earl of Mar wearing a pair of silk stockings, he begged the loan of them to appear before the English ambassador; "For ye would not, sure," said he, "that your king should appear as a scrub before strangers."

The Ghost Moth, has yellow wings, intersected with broad orange lines. It flies in the dusk of the evening, hovering up and down in one particular spot for a long time together, often in church yards, whence its English name. It lays very small eggs which the female discharges with some force, like the pellet from a pop-gun. The caterpillar is of a cream color, and feeds on hops.



The Diamond Beetle is so named, because its breast is covered with a crimson-colored shield, shining like metal; the head is of the same color, mixed with green, and on the crown of the head stands a shining, black horn, bended backwards. It is sometimes called "the king of the beetles." Not a very high compliment to kingship, since it lives and acts as filthily, as most others of the class.

a. and b. Butterflies. c. the Eggs. d. Pupa. e. Silk Worm.



Crab Fishing. Fishermen examining their Creels, or Crab Pots.

UNDER the general head of Articulata are classed the Crustacea. They may be regarded as representing, in the sea, the insects and Arachnidæ of the land. Their chief distinction from the latter is in their respiratory apparatus, which is adapted to breathing in water, and not in air. This apparatus consists of fringes of gills, like those of the fishes or molluses. They are also distinguished by a calcareous, shelly integument, which is secreted from the true skin, as the shells of molluses are from the mantle. To provide for the growing bulk of their bodies, they periodically cast their shells, and retire to some hiding place, being then wholly unprotected. Soon, however, these naked, soft bodies are covered with a mucous exudation containing a large amount of calcareous matter, which soon hardens into a new shell. They have a remarkable power of repairing injuries, so that if part of a claw be lost, a new one is soon produced in its stead.

The above will serve as general distinctions of the class, and we shall now proceed to describe some specimens, under the same conditions heretofore observed.

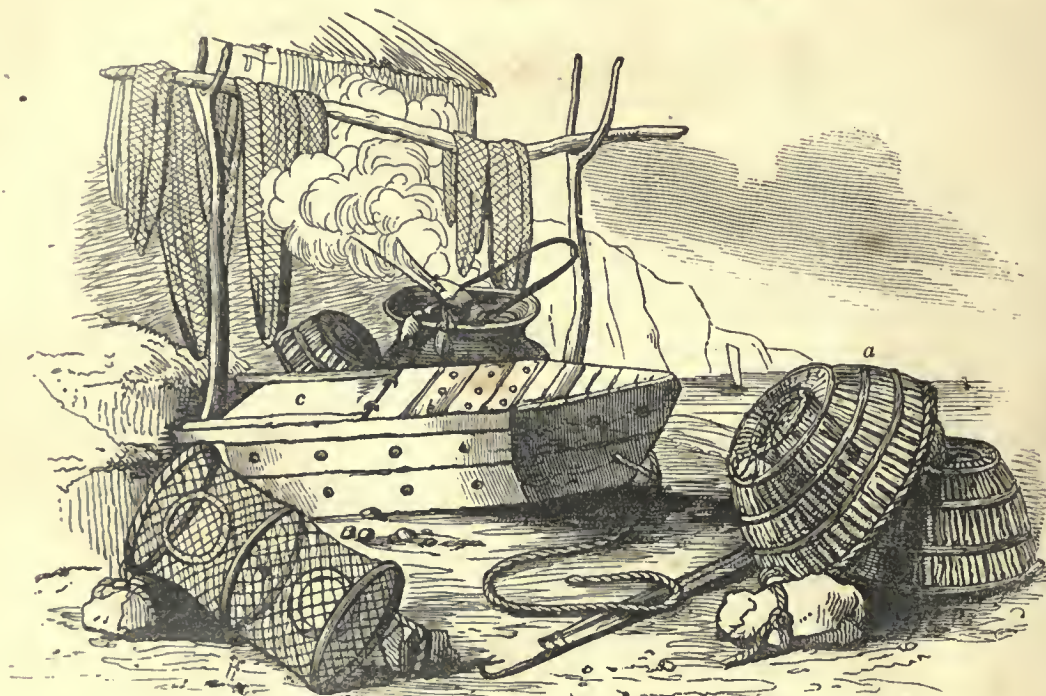
The Crab is mostly aquatic in habits, and grows slowly, though it lives long. It is voracious and carnivorous, and its first pair of legs constitutes a pair of powerful claws, with which it seizes its food and conveys it to the mouth. Its skeleton is external. Its senses are not deficient in acuteness. Its locomotive powers are such, that it can move with equal facility in any direction. Like the Crustacea generally, it periodically casts its shell. It is quite a favorite with epicures.

Crabs are taken in various modes—some very simple, and others on a large and more complex scale, for purposes of commerce. The West Indian monkey inserts his tail in the hole of the Crab, and the latter grasping it, the former jerks out his tail, and so secures his prize. The children of fishermen often catch Crabs, by thrusting into their retreats a stick, with a hook on the end of it, which the animal instantly seizing, is drawn forth. This, however, and the like methods, can take but few, and those not the finest in quality.

Crab fishing, as generally conducted along the British coast, is pursued by two men, going out in one boat. Be-



The Crab



Implements employed in Crab Fishing.

a. Crab Pot.

b. Lobster Pot.

c. Well Box.

sides their boat, they require a capital of about ten pounds; one half for creels, cruives, or crab pots, the other half for lines. These Crab-pots are made of dry osier, and resemble basket-work. They are framed on the principle of the wire mouse-trap, the aperture being at the top, instead of the side. Within the pot the bait, consisting of thornback, or skait, is fixed at the bottom, and the pot is then dropped in some favorable location, three stones being fastened inside of weight enough to sink it. Sometimes the pots are sunk twenty fathoms deep, under certain conditions of weather and ground. In fine weather, they are dropped in from three to five fathoms, but Crabs are found chiefly where the bottom is rocky.

A line is fastened to the pot, and at the upper end of the line is fixed a cork, which floats on the surface. Thus the place is known where the pot is sunk, and usually from forty to fifty pots are set at the same time. The bait being suspended about the middle of the pot, can readily be seen by the Crabs, which, entering the aperture, find, like a mouse in a wire-trap, that escape is impossible. Lobsters, Prawns, and Shrimps are often found captured with the Crabs.

After setting all their pots, the fishermen have still some time left to go further seaward for other fish, before it is necessary to visit them. Crab fishing, therefore, while a valuable addition to their means of gaining a subsistence, does not preclude their pursuit of other fish at the same season.

The demand for this fish is usually good and in many of the large coast towns is fully equal to the supply. After a few hours' absence, the fishermen visit their creels and take out their contents. There may, perhaps, be a dozen different owners of boats thus engaged, and it is, therefore, necessary to employ some means, by which they may secure the fruits of their own labor, without the risk of dispute. This they effect by putting on their respective floats some distinguishing mark.

Crabs are brought to market both raw and boiled. If the market be distant, they are placed in a well box, attached to the outside of the fishing vessel and thus are brought to Billingsgate even from far off Norway. May, June and July are the months in which it is generally out of season, though, even then Crabs may be procured, which are perfectly fit for the table. Before boiling, a good Crab is known by the roughness of the shell, especially that of the claws. After boiling, the mode of ascertaining its goodness is by grasping the claws firmly and shaking the body, which, if not in perfection, will rattle, or sound as if water were within. The usual length of boiling is from one fourth of an hour to two hours, either in sea water, or water saturated with salt.



Hermit Crab.

[*Calappa granulata*.]

a. The crab with the limbs exerted. b. The right chela



Cray-Fish.

The *Calappa Granulata* is a genus of Crabs, common in Europe. They are called by the French *migranes* and *cogs de mer* from their crests, and also *crabes honteux*, from their appearing to hide their legs under the shell. They are of a pale rose color.

The Hermit Crab is not so well protected as most of his tribe, since his tail is not covered with shell. He is, therefore, wont to secure his undefended tail by inserting it into an empty shell, commonly that of a whelk, and then walks about, dragging after him this curious appendant. Occasionally two of these creatures covet the same shell, and then they have recourse to a duel. As the Crab grows larger, he must have a new shell for his tail, and it is a curious spectacle to see him trying one after another, till he suits himself. They annually visit the sea in large armies. They march straight on, and save a house or other insurmountable barrier, nothing can stop them.

The Common Cray-Fish abound in most of our rivers and brooks. They lodge in holes in the bank, some times excavated by themselves, but oftener the abandoned abodes of water-rats. In rocky places, they live under and among the stones. The usual mode of catching them is by lowering to the bottom a net, baited with meat. Soon perceiving this, the fish come in numbers to the bait, when the net is suddenly hauled up, and the most of them secured. The flesh is esteemed a great delicacy.

The Prawn so much resembles the Shrimp, that they are not readily distinguished from each other. The main distinction between them is said to lie in the appearance of the toothed ridge running along the back of the head, or rather the carapace. Brown, in its natural state, the Prawn assumes a pinkish hue after boiling.

Shrimp.



Prawn.



Lobster.



A Shrimper.

For a distant market, Shrimps must be boiled somewhat longer, than for immediate consumption. Hence they are always most relished at or nigh the place of their capture. The chief supply for London is procured from Gravesend, Lynn, Boston, the Isle of Wight, and other parts of the coast not very distant from London. The Shrimps of Pegwell Bay are in highest repute for flavor.

Spring is the busiest Shrimp catching time, though they are in season through the year, because the demand is then greatest. The largest quantity of this fish is consumed by the least wealthy of the population, the more opulent using them chiefly for sauces or in a potted state.

The *Atya Scabra* is a peculiar sub-division of the Shrimp family, and one species only is known.

The Lobster has a cylindrical body; a short, serrated snout, with two long antennæ, and between these, two shorter ones; two large claws, terminated by pincers, which enable him to seize his prey, to fix himself to rocks in the sea, to resist the motion of the waves, and to fight his enemies. These animals breed in summer and are extremely prolific. They are also favorites of the gourmand.

The *Apus Productus* inhabits fresh water ditches, pools, and stagnant waters. The tribe are gregarious and often occur in measureless quantities. They are most commonly found in spring and early summer, and often appear suddenly in accidental rain water puddles, where they had not been seen before. They grow rapidly, feed largely on tadpoles, and are all provided with eggs, though the sexes have not, as yet, been distinguished. They arrive gradually at the full development of their organs by a series of moults. The genus occurs in England, France and Europe generally.

The Shrimps are small fishes of the Lobster kind, having long, slender feelers, and between them two projecting laminae, with three pairs of legs and a seven jointed tail. They are found on the sandy shores of the sea, ascend the rivers, and abound in the waters of salt marshes. The epicures pronounce them "delicious."

The mode of taking Shrimps for food is with a net, used either by a man, woman, or child, who wades up to the knees, or by fishermen, who go out in a boat. The mouth of the net is stretched out by a cross-piece of wood, having attached to it a pole, the end of which is placed against the chest; and in walking forward, the edge of the part, to which the net is fastened, is pushed along the bottom of the water, and the Shrimps, striving to escape, are caught in the bag of the net.

The boats, used by the fishermen, are sometimes of several tons' burden, and they go farther from the shore, perhaps to the edge of some sand bank, which is the favorite resort of Shrimps. They throw out three or four nets, which are made to drag on the bottom by leaden weights: so that the principal of both methods is the same.

Shrimps are not eatable till after boiling, and the fishermen often boil them on board. They are allowed to boil only ten minutes, or even less, as they grow hard and lose their best flavor, if remaining longer in the boiler.



Apus Productus.



Birgus Latro.



Atya Scabra.

Birgus Latro is a long tailed crustaceous animal approaching the Hermit Crab. Of this genus the middle antennæ have their second articulation tufted by pincers; the feet of the first pair of legs are unequal and terminated by pincers; the feet of the second and third pair end in a single nail; and the tail is round.

They are natives of Amboyna and the neighboring islands. Wherever they may be, they journey once a year to the sea, and after their return, they hide themselves in the earth for six weeks, so that not one is seen. During this period, like other crabs, they doff the old shell and gain a new one. They are said to be most delicious eating, just after casting their old crust.

The number of legs possessed by the Crustacea is greater than that of perfect insects, being never less than four pairs, besides the pair of claws which may be considered as metamorphosed legs. It is in the crab, lobster, cray-fish, &c., that we find this small number; and these belong to the highest order, the Decapoda, or ten-footed Crustacea. In front of these are some curious organs termed feet-jaws, being intermediate in structure between these two kinds of appendages; in some of the lower Crustacea these become true legs. And from the posterior part of the body there hang down certain appendages, which are also true legs in the lower orders. In fact, the lowest Crustacea approach very closely to the Myriapoda in their general form and structure, differing chiefly in their aquatic mode of life; the segments of the body are nearly equal, and are each furnished with a pair of legs. On the other hand, among the Decapods we find an approximation to the form both of insects and spiders—the lobster representing the one, and the crab the other. In the lobster we have a regular division into head, thorax, and abdomen, as in insects; and it is to the thorax alone that the locomotive appendages are attached, as in the perfect state of the insect. As in all other Articulata, the eyes of the Crustacea are compound. Their external coating is thrown off with the shell; and this, when examined with the microscope, is seen to exhibit the division into minute lenses with beautiful distinctness.



Lobster.

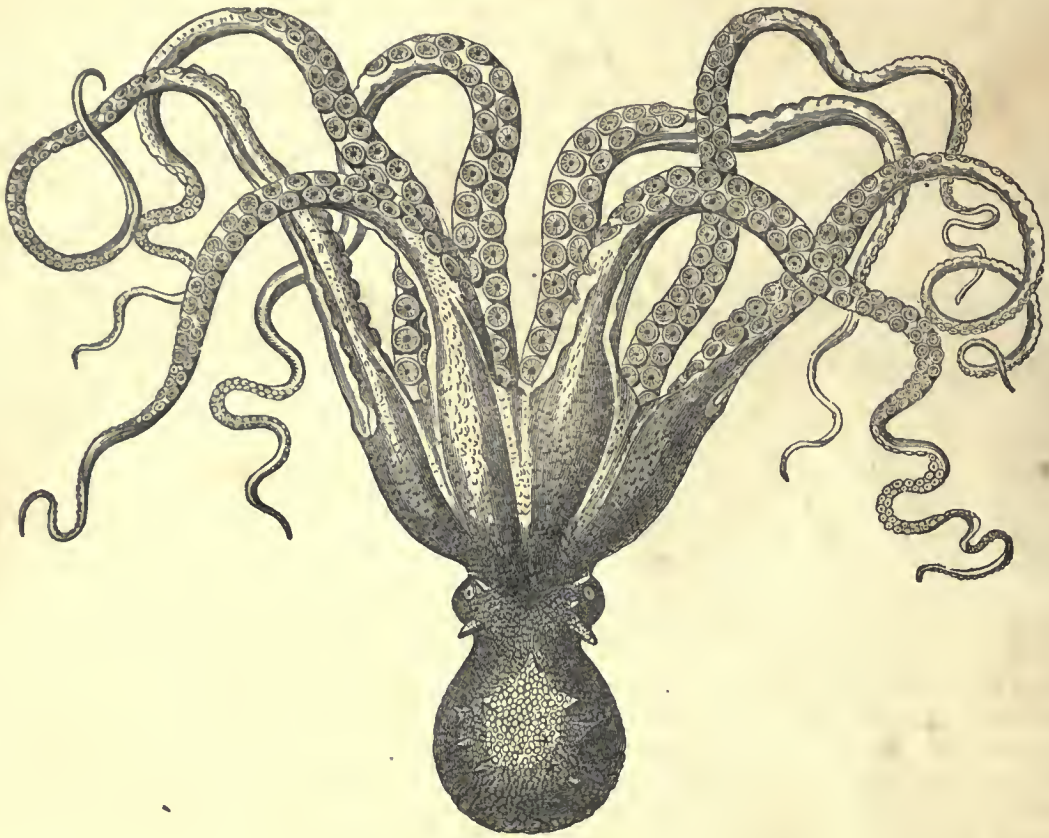


Shrimp.



Crab.

MOLLUSCA.



Cuttle Fish.

THE Mollusca comprise a variety of forms so great, that it is, perhaps, impossible to frame a definition which shall include them all. On the one side, the class approaches the fish so nearly, as to be hardly distinguishable therefrom; and on the other, it in like manner, approximates to the Polyfera.

In all the Mollusca, the body is of soft consistence, and is inclosed in a soft, elastic skin, lined with muscular fibres, which is called the *mantle*. They generally possess a complex digestive and circulating apparatus, but very imperfect organs of sensation and voluntary motion. The great bulk of their bodies is made up of the stomach, and intestines; of the liver and other glands connected with digestion and assimilation; of the breathing apparatus; and of the ovary for producing germs; while the muscular system is often reduced to a few scattered fibres, and rarely attains any complexity or power.

Multitudes of the Mollusca are completely stationary, and depend for food on what is brought to them by waves and currents. A few have locomotive powers, and search for their food. Most of the class have shells, which are formed by a secretion from the surface of the mantle. Many, however, are without shells. Therefore the ancient classification, which divided these creatures into univalves, bivalves, and multivalves, according as the shells consisted of one, two or more pieces, is imperfect, and therefore they are now classed by the particulars of their configuration.

On this principle, the Mollusca may be divided, first, into those having a head, that is, a prominent part, on which the mouth is located, with organs of sense near it, and those, which are *acephalous*, or headless. These general classes are again distributed into many sub-classes. To describe minutely all these sub-classes, with the special characteristics, would too greatly swell our pages. We shall, therefore, furnish several specimens, briefly noting their distinctive marks, and simply state to what division they belong.

The Cuttle Fish has a compressed, oval body, of a jelly-like substance, usually covered with a coarse skin, appearing like leather. It has eight arms, furnished with numerous cups or suckers, with which they seize their prey, or attach themselves to rocks so firmly, that it is easier to tear off their limbs, than



Cuttle Fish, attacking a Chinese Junk.



Cups, or Suckers of the Cuttle Fish.

compel them to loosen their hold; and if they are torn off, they are soon reproduced. They have, besides, two feeders, much longer than their arms, provided also with circular suckers. Their mouth is in the centre, horny, and hooked, and strong enough to crush the molluscs, on which it feeds.

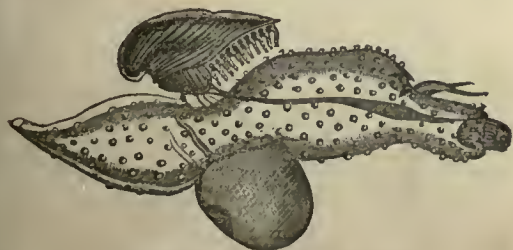
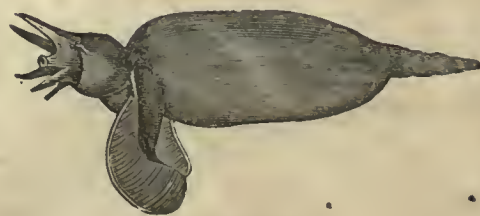
When pursued, it ejects an inky fluid from the left side of the abdomen, which not only clouds the water, so as to conceal its retreat, but also renders it so bitter, as to drive away its foes. This fluid, when dried, is used in making India ink. In hot climates they attain an enormous size, and sometimes successfully attack boats and small vessels.

The *Argonauta Argo*, commonly called the Paper-Nautilus, from the delicacy of its shell, though little resembling the true Nautilus, belongs to the so-called Octopod group. Its shell has a single spiral cavity, into which the animal can withdraw itself entirely, though it has no muscular attachment thereto.

It has eight arms, six of them tapering towards the extremities, and two expanding into wide membranous flaps. It has been immemorially reported, that this animal swims on the surface of the water, using its six arms, as oars, and spreading the two membranes as sails. This is an error. The arms are used for swimming through the water, and for creeping along the bottom of the sea, and besides, it is by the use of these arms that the material is chiefly found out for the formation or repair of its shell.

The *Carinaria Mediterranea* is similar to the *Argonauta* in its structure. It is found in the Indian ocean, as well as the Mediterranean.

The *Clio Borealis* belongs to the class Pteropoda. It is adapted for swift locomotion through the water, by a pair of fin-like organs, attached to the fore part of the body, and has a very complex internal structure. This species swarms in the Arctic seas, where it is familiarly known as whale's food, and appears to abound equally in the Antarctic waters. So glutted is the sea with them at times, that the whale cannot open his mouth without engulfing thousands of them.

*Carinaria Mediterranea.*
(367)*Clio Borealis.*

MOLLUSCA.

Young Shell.



Adult Shell.
Cypraea Exanthema.



Argonauta Argo.

Young Shell.



Adult Shell.
Pteroceras Scorpio.

In the class, called Gasteropoda from something like a foot, adapted to locomotion, proceeding from the belly, the distinctive characteristics of the Mollusca are most prominently displayed, that is the high development of the nutritive apparatus, with very imperfect locomotive powers. In the more perfect of them we find a distinct head, furnished not only with feelers, but with eyes, and the rudiments of smell and hearing. They can crawl from place to place, and many of those inhabiting the water can swim rapidly. Generally they are univalve, but occasionally multivalve. Their shell, as in other classes, is secreted from the mantle, and is enlarged as the animal grows. The forms of the shell vary extremely in the several subdivisions.

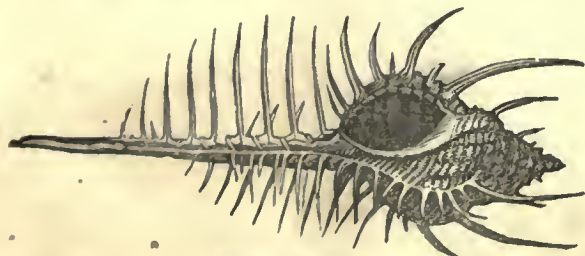
We present on this page some specimens of the Gasteropoda, namely, the *Murex Tenuispina*; the *Pteroceras Scorpio*; and the *Cypraea Exanthema*.

Bulla is the name of a genus of Molluscs. Of some of its principal varieties we proceed to give a brief account.

In the *Bulla Fragilis* the shell is ovate-oblong, very thin and fragile, of a horn-color, with very small transverse stripes, and with an apex rising into the rudiment of a projecting spire. It abounds in the English Channel, near Nantes and Noirmontiers.

In the *Bulla Velum* the shell is very delicate, of a light horn-color, with a snow-white band about the middle, bordered on either side by a dark-brown one, and with white apex and base, both bordered with dark-brown bands.

In the *Bulla Ampulla* the shell is egg-shaped, and verging on the globular, beautifully mottled with white, plum color, and reddish. It is said to exist in both the Indian and American oceans.



Murex Tenuispina.



Bulla Fragilis. A Shell. B Anir. C Spiral End.



Bulla Ampulla.



Gasteropetra Meckeli.



Bursatella Leachii.

In the *Gasteropetra Meckeli* the body is divided into two parts, the posterior being round and connected by a peduncle with the anterior portion, which is small, but enlarged on each side into a considerable muscular expansion, transversely oval, and hollowed out in the middle, both above and below, rendering this expansion double-lobed, and an organ for swimming, instead of a foot for creeping. The side-gill is uncovered and there is no shell. It abounds in the Sicilian seas.

In the *Bursatella Leachii*, the body is nearly round; below is an oval space surrounded by thick lips, indicating the foot; above is an oval opening with thick lips, formed by the union of the swimming appendants of the mantle, and communicating with a cavity, in which are formed one very large gill and the vent. The tentacula, or arms, are four, divided and branched, besides two buccal appendages. It is large-sized, and a native of the East Indian seas.

The Common Snail is of the class *Gasteropoda*. It is so well known as to need no description. It lays eggs large in comparison with the parent. They are deposited about two inches below the surface of the earth. The Snail is very tenacious of life.

The Slugs are invaders of the garden like the Snails. They seldom venture out by day, but trail along through the garden at night, devouring the tender leaves.

Bulinus is the name of a very large genus of land mollusca, endowed with lungs. These are described, as plant eaters, as respiring by lungs, and as protected by a spiral shell, more or less elongated, oval, oblong, with an aperture longer, than it is wide, and with a very irregular border, which in the adult, is retorted. The head is furnished with four tentacula, or horns, the two largest of which are terminated by the so called eyes. They abound most in the warmer climates, where some of the species are very large.

The reproduction is by eggs, which are white and have a firm shell like those of birds. The *Bulini* are genuine hermaphrodites, both the sexual organs being distinct, but existing in the same individual, and requiring the union of two for continuing the species.



Bulla Velum.



Black Slug.



a The Egg. *b* Egg broken, showing the young animal. *c* *Bulinus Haemastoma* of the natural size. *e* Young one, just born. *d* Young one, half-grown.

Their food is the tender leaves of plants, and it devours eagerly lettuces and cabbages, when they can be had. During the day, they lie in the shade semi-dormant, but move about towards evening, especially if warm and moist, as they are evidently very fond of moisture. They are hybernating animals, or torpid during winter, and they deposit their eggs, in spring, about two inches below the earth's surface.

We give cuts of three species of the *Bulini*, at various stages of their life, from the egg upwards.

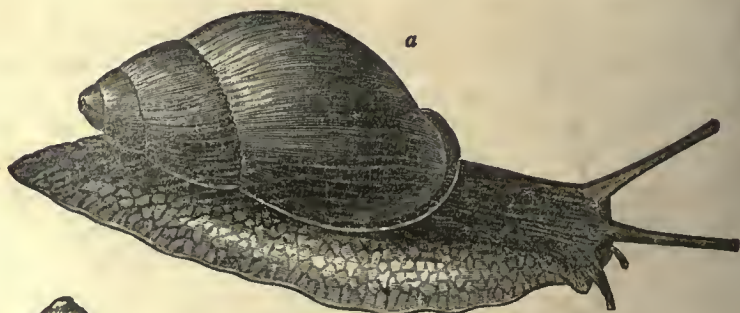
The Midas's Ear of the shell collectors is a good specimen of the genus *Auricula*. It lives in the neighborhood of rivers, lakes and morasses.



Common Snail.



Auricula Midas, or Midas's Ear.



b



c



d

Bulinus Rosaceus. *a* Adult animal, in motion. *b* A young shell. *c* Egg shell, just broken. *d* Egg, unbroken.



Cardium Carissima.



Variegated Amphidesma.



Cardium Elongatum.

the ligament is external. Animals of this class affix themselves to other bodies by a particular muscle, which is protruded through the gaping part of the valves. When young, they also adhere by the byssiform epidermis, which envelops the exterior.

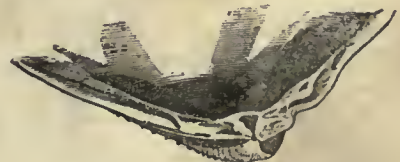
The Cardium Cardissa belongs to the cockle family of the headless, bivalve molluscs. Of this family the general characteristics are, that the mantle is open in front, but behind presents two syphons, or orifices, one for breathing, and the other for passing egesta. These syphons are sometimes distinct, and sometimes massed together. At either end of the shell is a transverse adductor, and a foot for the general purpose of locomotion. As a general rule, the species, with elongated syphons, live buried in the mud or sand. The plate annexed represents the Cardium Cardissa, a spotted variety of the family, as of the natural size.

The Cardium Elongatum, another variety of the same family, so resembles the preceding in its general features, as to require no separate description. The character of its valves and hinge may be seen in the appended cut.

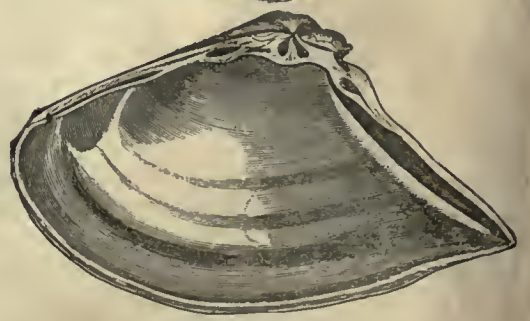
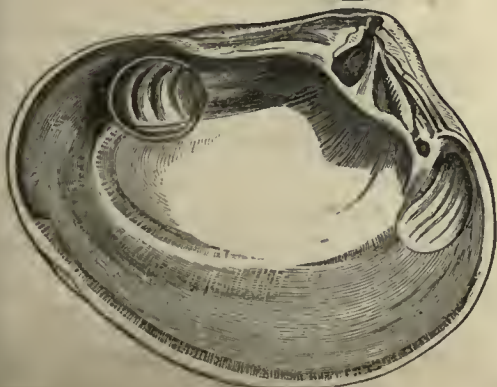
The Brazilian Capsa belongs to a genus, in which the hinge closely resembles that of the Cardium, but the shell nearly approaches the triangular, with the obtuse angle at the umbones of the valves, and the



Common Crassatella.



Donax Scortum





Brazilian Capa.



Scallop.



Common Oyster.

base of the triangle at their margin; the shortest side contains the ligament, that is, the hinder part of the shell; whereas, in bivalves, generally, the hinder part is longest. This genus is widely diffused, some species of it existing in all seas. They lie buried in sand or mud, with the short end of the shell uppermost, that water may enter through the breathing syphon.

In the annexed plate are represented the hinge and interior of the valves of the *Donax Scortum*. The fossil species of this genus are few, occurring chiefly in the blue marls of southern France, and in the oolite series.

The Variegated *Amphidesma* is a species native to the Brazilian coast. Five fossil species are recorded by Phillips, as found in the oolite group.

The Common *Crassatella* comprises ten or twelve known species. It would seem to belong to the shores of America, having been there dredged up from sandy mud in eleven fathoms water. Fossil species of this mollusc are found in the London clay, and in the *calcaire grossiere* of Paris.

The Scallop belongs to the family of *Pectens*, or *Pectenidæ*. Like the Oyster, it is two-shelled. These two shells are united by a powerful and exceedingly elastic hinge. In addition, the animal is provided with a very powerful muscle, obedient to its will, by means of which it may, at pleasure, open its valves or keep them firmly shut. The Scallop employs the rapid opening and shutting of its shells, as a means of locomotion. This creature is found in the European seas, and along the southern coasts of England. All may remember, the Scallop-shell was used, in the middle ages, as the badge of a pilgrim to the Holy Land.

The Common Oyster has been for many ages considered as a delicacy for the table. In the times of the ancient Romans, we find that the native English Oysters were exported to Rome, and there placed in the Lucrine Lake, where they were fattened. On the coast of England, the Oysters breed in large beds, to which vast quantities of young Oysters are conveyed by the fishermen, and suffered to increase without molestation. Newly formed beds are untouched for two or three years. During the months of May, June, and July, the Oysters breed, and are considered unfit for food. At this time the young, called spat, are deposited in enormous numbers. They instantly adhere to the substance among which they fall, and this, whatever it be, is called cultch, and is protected by severe penalties. About May, the fishermen separate the spawn from the cultch, which is then thrown back into its former place. After May, it is felony to disturb the cultch, as were it removed, muscles and cockles would rapidly take the place of the Oysters. The Oysters are taken in the proper season by the dredge, a kind of small net, fastened round an iron framework, which scoops up the Oysters, and many other marine animals. The part of the Oyster called the beard, is in reality the respiratory apparatus.

Dredging for Oysters is necessarily prosecuted in fleets, as the beds lie within a comparatively small compass. Each boat usually carries two men, or a man and a boy, and is about fifteen feet long. The dredge is of about eighteen pounds weight. Each boat is provided with two dredges.



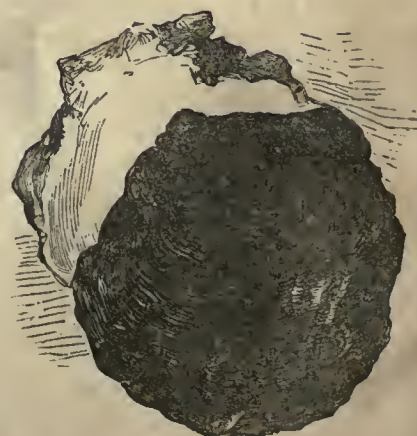
A Fleet of Oyster Boats.

The Pearl Oyster, is the mollusc, from which pearls are extracted. The pearl is nothing else than the naure, which lines the inner surface of the shell, deposited in globular drops. This shell-lining is aptly named "mother of pearl." These oysters are found in both the Old and New Worlds. Ceylon is especially famous for its pearl fisheries. The fishers are trained to remain long under water, and when descending to the bottom tie a heavy weight to their feet. They rapidly gather into a basket all the oysters near by, and when needing air, give a signal to their friends, who draw them to the surface by a rope. The oysters are then left, for some weeks, to putrefy, when they are washed, and the pearls extracted. The Chinese have a mode of *forcing* oysters and mussels to form pearls by placing beads in their shells, round which a layer of naure is deposited, and a pearl produced.



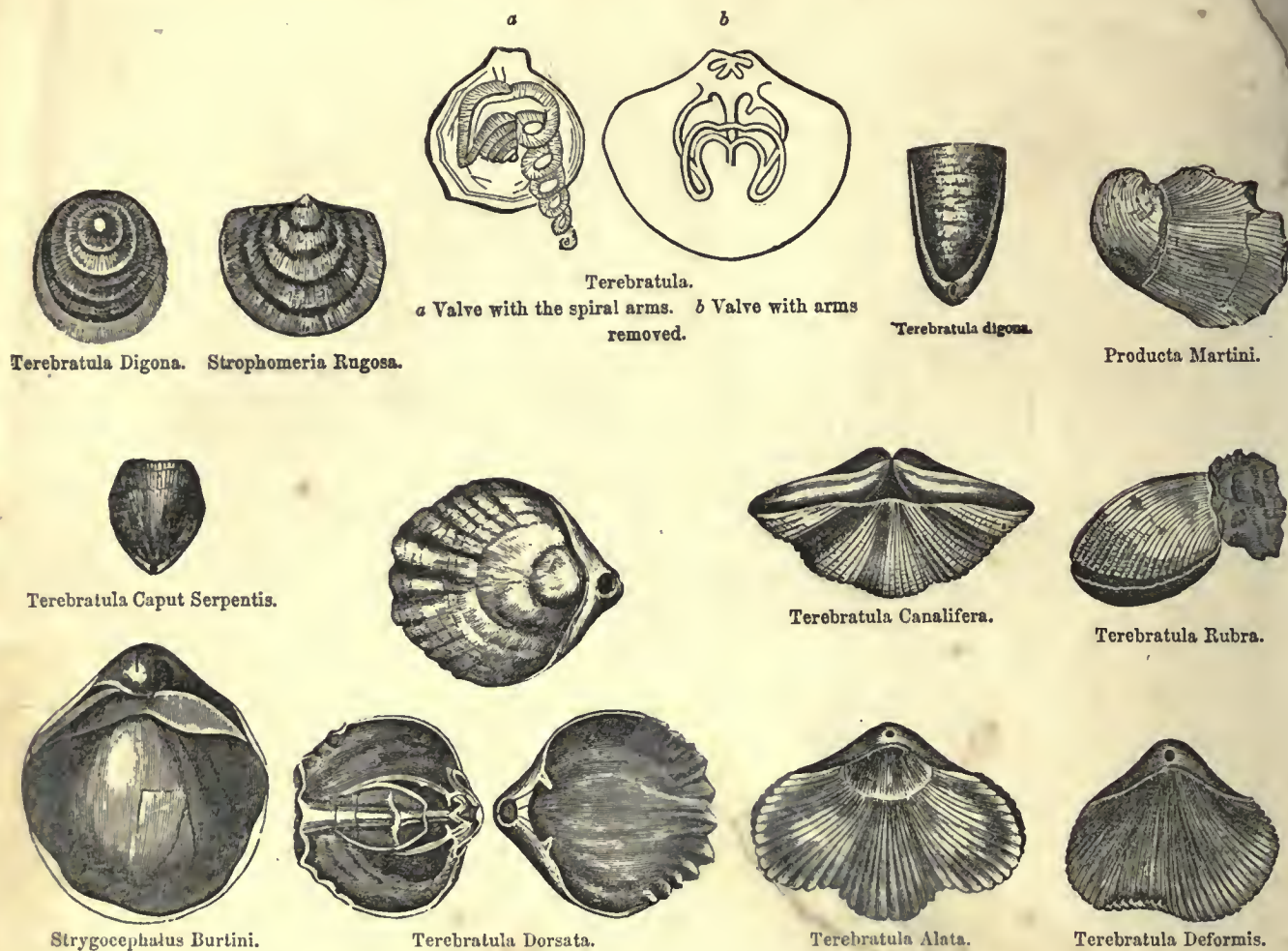
Pearl Fishers.

(377)

Cuttle Fish.
32 *

Pearl Oyster

MOLLUSCA.

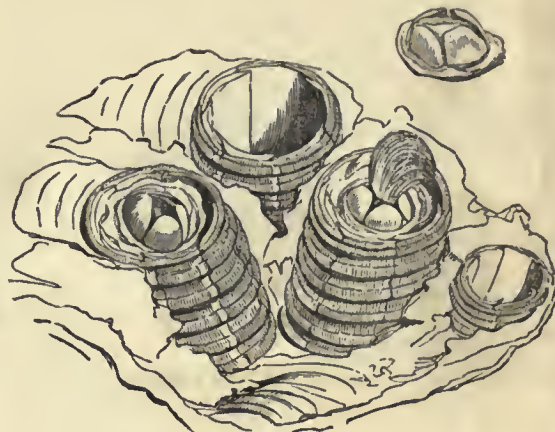


Besides the orders now described as composing the class Conchifera, there is a very curious group which should also be included in it, although established as a separate class by many naturalists. This is the group of *Brachiopoda*, containing only three genera at present known, namely, *Terebratula*, *Lingula*, and *Orbicula*; but formerly of much greater comparative importance. These animals have all bivalve shells, differing in no essential particular from those of the Conchifera in general. The two former genera are attached, however, by a footstalk proceeding from an opening in one of the valves near the hinge, to solid substances. The *Orbicula* is attached, like an oyster, by one of its valves. But in the complexity of the muscular apparatus provided for giving motion to the valves, they much surpass the highest of the other Conchifera. There are not only several muscles provided for the closure of the shell, but another set to open it—an organization which no other bivalves possess. The most peculiar part of their structure, and that from which they derive their name, consists in the presence of two very long arms or tentacula, between the origin of which the mouth is situated. These can be projected to a considerable distance from the shell, or drawn in and coiled up spirally within it. They do not appear, however, to seize upon prey; but rather, by means of the cilia with which they are fringed, to create currents which may bring food to the mouth. In the *Terebratula*, these arms are affixed at their bases to a very curious framework within the shell, the use of which is uncertain; but it is believed to aid, by its elasticity, in separating the valves from each other. This framework is most complex in the species in which the arms are shortest. The species of *Brachiopoda* at present known, live at great depths in the ocean; and many of their peculiarities seem to have reference to that particular condition. They are distributed through all latitudes.

We furnish above a few specimens of this group of shells.



Coronula Balænaris.



Tubicinella Balænarum.

The Common Bernicle, or Barnacle, at first sight, closely resembles a mussel-shell fixed to a long stem. Nearer inspection shows a difference. Its shell is composed of five pieces, and through its aperture are protruded two rows of "cirrhi," or arms, which serve to entangle the small molluscs, or crustacea, which pass near them, and carry them to the mouth, where they are devoured.

The Bernicle is always found attached to some larger object, usually floating wood, and is very common on the hulls of ships. Yet, though the mature animal is permanently fixed, it has been discovered, that the young are free, and capable of locomotion, nor do they finally "settle in life," until a week or two old. It has previously been related how this mollusc acquired the name of "Goose-bearing."

The Common Bernicle bears the scientific name of *Pentalasmis Anatifera*—the last word being the Latin for goose-bearing, which has been given to the animal on account of the ancient and exploded fable that it actually produced the Bernicle Goose.

The *Tubicinella Balænarum*, or Whale Bernicle, is so called from its burying itself in the skin and fat of whales, which are sometimes infested with it to an enormous extent.

Coronula Balænaris is another Bernicle, also found attached to whales. It is found in the South Seas.

Pollicipes Mitella is a Bernicle found in the temperate and warm seas. It has a triangular shell, besides the principal valves, of a number of accessory pieces fixed at their base.

Conia Porosa, a Bernicle found in the Mediterranean, West Indian, and other seas, is of a sub-conical form, the shell being composed of four valves.

The lowest and simplest, in structure, of the Mollusca are the Tunicata, so named from the entire absence of a shell, the place of which is supplied by a *tunic*, or outer coat, firmer than the rest of the body, entirely surrounding and protecting the animal, besides being the means of its attachment to the hard substances whereon it commonly rests. This tunic varies in consistence, form and color, sometimes dark and leather-like, sometimes cartilaginous; sometimes exuding a gluten, which attaches sand, gravel, &c., so as to form an additional envelope. Again, the whole body is soft and delicate, and the tunic is a thin,



Conia Porosa.



Common Bernicles.



Pollicipes Mitella.



Botryllus Stellatus. a Group of four *Botryllus* attached to the base of an *Ascidia intestinalis*.
b *Botryllus* magnified.



Star Fish.



Ascidia Australia. A External aspect.
B Internal structure.



translucent membrane. Most of this class are generally attached to solid bodies, or to each other. In the latter case several individuals, each being distinct, are surrounded by a common membrane. The tunic is always provided with two apertures, one for the entrance and the other for the exit of water, which supplies the creature's food, besides oxygenating its blood. The *Ascidia Australis* affords an example of the Tunicata.

The Stellated *Botryllus* (*Botryllus Stellatus*) affords another specimen of the Tunicata. It is found in the Mediterranean.

The reader will recollect that the animal kingdom of which we are treating, comprises four great sub-kingdoms, of which we have already examined three, viz. Vertebrata, Articulata, and Mollusca. We now come to the last and lowest form of animal life, the sub-kingdom, Radiata.

The Radiata, like the Mollusca, comprises a vast number of classes and species, differing more or less from each other, yet exhibiting with greater or less distinctness certain common marks. They take their name from having a form approximating to the circular, a mouth in the centre of one of the surfaces, and something like a ray-like disposition of the parts around the mouth. It were difficult, if not impossible, to specify any other distinctive mark applicable to all of them. We therefore proceed at once to touch briefly on the several classes.

The class, Polygastrica, includes the greater part of the animalcules—those minute beings, which, so far as concerns man, may be called the *creation* of the microscope. It is now known, that these creatures abound in every drop of stagnant water, and even in the whole mass of the ocean. Neither need we say stagnant water, for all unfiltered water will be found swarming with this species of animal life. So beyond enumeration are the varieties of these animals, and so minute are the peculiarities distinguishing each variety from the other, that without attempting to specify marks common to all, we shall content ourselves with presenting a few specimens.

The class, Echinodermata, takes its name from the prickly skin, with which most of its species are furnished. The Star Fish, and Sea Urchin are examples of it. Some of the species, however, forming the



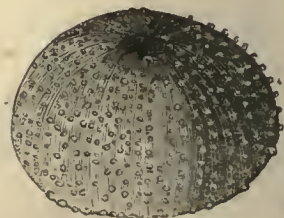
Various forms of Animalcules (*Polygastrica*.)



Star Fish.



Sea Anemone.



Sea Urchin.



Alcyonium. A Portion enlarged, showing Polypuses attached.



b Lower side of Vellela Lata.

as, are devoid of the spine, though retaining some marks, however slight, in this class.

Echin, or Echinus, come under this class.

found in all oceans and seas, except the very coldest. The mouth is in the centre of the disc, and is surrounded by tentacula, in rows. The under side forms a sucker, by which *Unicellaria Chelata* rocks. It belongs, like the Hydra, to the class Polypifera.

The Alcyonium is found abundantly on many parts of the British shores, and the different varieties are called by fishermen, *dead man's hand*, *sea-fingers*, *sea paps*, &c., from their flabby texture, and the peculiar forms they present. They have Polypuses attached to them, which can be drawn within the protuberances of the Alcyonium.

The Pennatula, or Sea Pen, belongs to the same class, and in some respects resembles the red coral. It has a stony axis, but this is flexible at the extremities, and it is not attached by a solid basis, but moves about at the mercy of the waves.

The Vellela, Rataria, Porpita, and Polybrachiona, are placed by Linnæus among the Medusæ.

The Vellela Lata has a membranous, oval body, much depressed, convex and swollen, supported above by a transparent, oval, subcartilaginous piece, marked with concentric striae, and crowned by a vertical and oblique crest, concave beneath, with a mesial nucleus, having a central mouth at the end of a proboscis-like prolongation, encircled by feelers of two kinds, the outer being much longer than the inner ones.

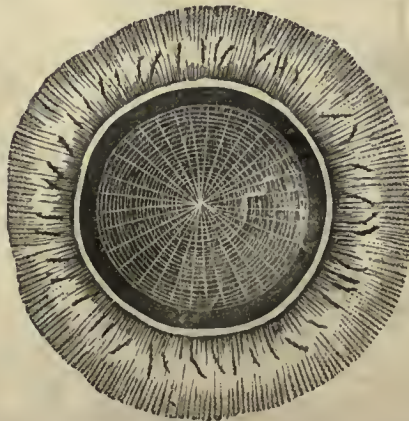
This animal is widely diffused, being found in the seas of Europe and America, Asia, and Australia. They are often found far at sea, huddled together, young and old, in considerable masses.



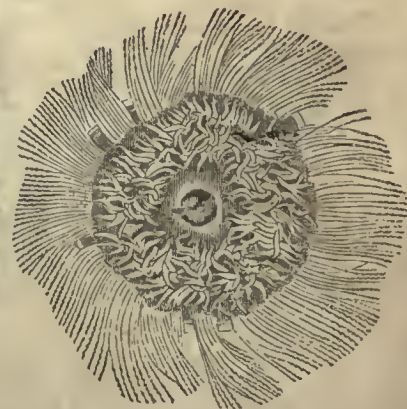
Rataria.



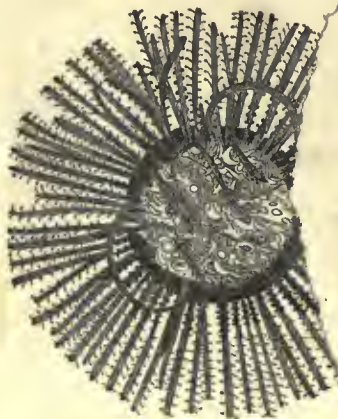
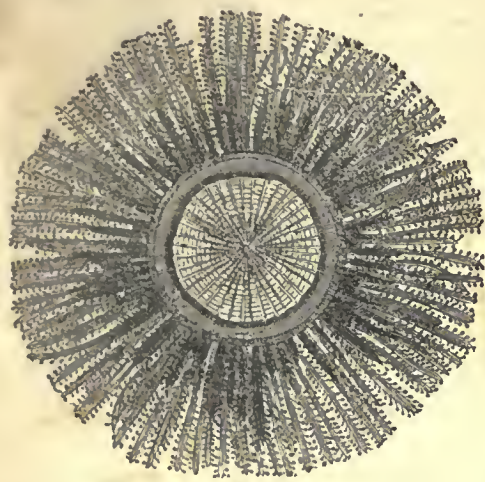
Sea Pen.



Porpita Gigantea.



RADIATA.



Polybrachionia Linnaeana. a Upper side. b Lower side.



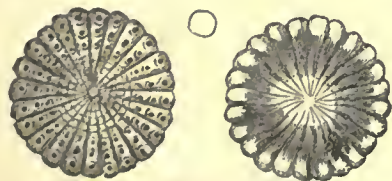
Ascidia Australia. A External aspect.
B Internal structure.

The Rataria Mitrata has a circular, or oval body, supported by a subcartilaginous piece, with a muscular, moveable, longitudinal crest above, concave beneath, and in the centre with a proboscis-shaped stomach, as also with one row of marginal, feeler-shaped suckers. It is found in

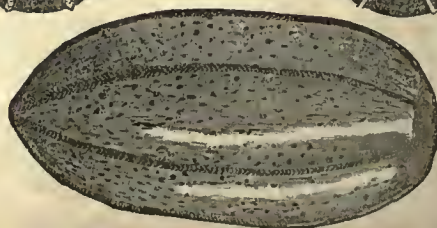
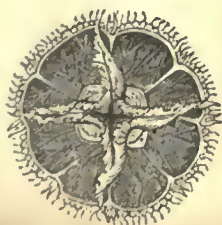
The Porpita Gigantea has a regular, circular, membranous body, depressed and slightly convex above, supported by an internal cartilaginous support, circular, with its surface marked by concentric striae, crossing radiata striae, and on its superior surface covered by a delicate membrane merely. Beneath, the body is concave, and the under surface is supplied with numerous feelers, the outer ones being longest, and furnished with small fringes, each terminated by a globule. These globules sometimes contain air, and the inner ones are the shortest, simplest, and most fleshy. In the centre of these feelers is the mouth, formed like a small proboscis, and leading to a simple stomach, surrounded by a glandular substance. It is found in nearly all the seas.

The Porpita Glandifera, in its leading characteristics, so closely resembles the Porpita Gigantea that no separate verbal description is required, and we therefore refer the reader to the appended plate.

In the Polybrachionia Linnaeana, the back-support is cartilaginous, naked, flattened, rounded, radiated and concentrically striated; the mantle is narrow, and surrounds this support; the arms are numerous, parallel, of different lengths, elongated, attached beneath, and capable of assuming a slanting position for



Lunulites Radiata.

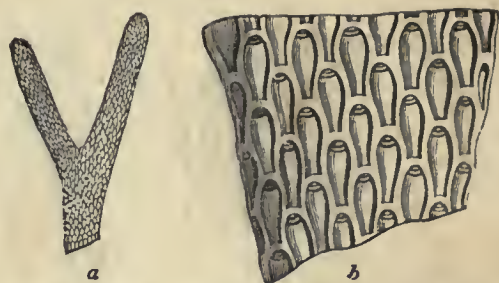


Medusa

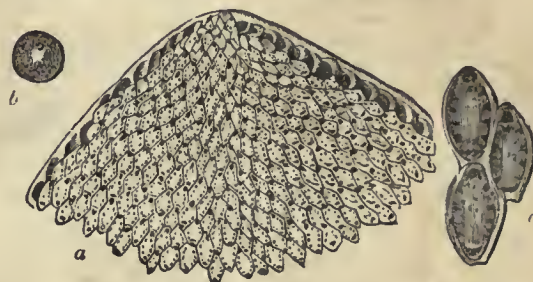
RADIATA.



Unicellaria Chelata. *a* Natural size. *b* Magnified.



Flustra Carbacea. *a* Section natural size. *b* Magnified.



DeFranc's Lunulite en Parasol. *a* Portion magnified. *b* Natural size. *c* Three cells, highly magnified.

capturing prey; the mouth is beneath, central, purse-shaped, and susceptible of extension; the feelers are numerous, various-shaped, suctional, and cover the entire belly; the eggs are very small, immensely numerous, and are nestled amid the feelers. These creatures abound in the Carribean Sea.

The Class, *Acalephæ*, derives its name from the stinging power possessed by nearly all its varieties. Popularly, these animals are variously called *sea-nettles* and *jelly-fish*. It is not easy to specify marks characterising all the species, so immense are the differences among them. They are not, like some classes, attached to solid bodies, but can move freely through the sea, nor, like others, are they covered with a thick integument. The tissues are so soft, that they appear almost like masses of jelly, and from this fact came one of their popular names. Without further specifications, we furnish some representations of the class.

The *Beroë Ovata*, the *Medusa*, and the *Physalus*, are examples of this class.

The class, *Polypifera*, was formerly a subject of dispute, some classing it among animals, others among vegetables. These animals form the structures named *Corals*, *Corallines*, &c. It has been supposed that the Coral was formed by certain insects, as the comb is by bees. This is an error. *Corals*, *Sea-fans*, &c., are *skeletons* of the animals that produced them, and are parts of the living creature so long as the flesh, clothing them, retains any vitality.

The *Hydra*, or fresh-water *Polypus*, one of this class, is a minute animal, found in great abundance clustering round aquatic plants in stagnant pools. It alters its form and contracts into a sort of sphere when digesting its food, which consists of aquatic worms and insects.

Among the *Radiata*, the large class of *Zoophytes*, and *Polypi* are ranked. Many of these animals are very minute, microscopic, in fact. Still they are extremely interesting to naturalists on account of their curious habits.

The *Cellariae* are *Polypifera*, and in all their varieties are very curious creatures. They consist of a compact, gelatinous matter, studded with numerous cells, inhabited by *Polypuses*. An opaque-white, egg-shaped, flattened, little body, previously invisible, issues from this gelatinous mass, apparently through the special influence of light. These minute creatures are very active, swimming through the water in all directions, now rising to the surface, and now diving to the bottom, moving in a straight line, or in a circle,

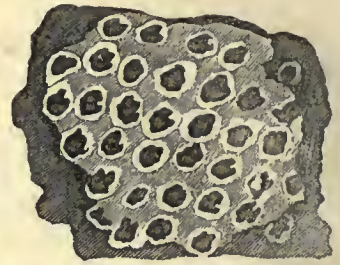
RADIATA.



Electra Verticillata. *a* Natural size.
b Magnified.



Section of living Sponge.



Flustra Dentata, magnified.

or tumbling about above the substances near it. Finally, becoming stationary, a margin gathers round the body, and the centre, growing transparent, shows within an inanimate Polypus.

Among the varieties of the Cellariæa are the *Lunulites Radiata*, found in Grignon; the *Lunelite en parv.* of DeFranc; the *Electra Verticillata*, of Gmelin; the *Flustra Dentata*, found in the northern seas; the *Flustra Carbacea*, found in the seas of Scotland; the *Pherusa Tubuloza*, of Ellis and Solander; the *Cellaria Ceroides*, of Gmelin, found in the Mediterranean, and the Indian seas; and the *Unicellaria Chelata*, found in the seas of North America.

The class, Porifera, presents so complete a commixture of the characters of animals and plants, that it is hard to say to which division they belong. On the one hand, like plants, they are fixed to one spot, possessed, apparently, of no sensibility, and seem to have no power of voluntary motion. On the other hand, their structure is unlike that of plants, and resembles that of creatures belonging to the animal kingdom. They are, therefore, commonly assigned to the latter, but at the lowest point on the scale.

The Sponge is a familiar variety of this class, which may serve to represent the whole. What we call and use as Sponge is, however, but the skeleton of the creature. When alive, this fibrous network is clothed within and without, by a thin, gelatinous substance, very similar to the white of an egg. This substance drains away, on the Sponge being taken from the water. During the Sponge's life, it not only grows, regularly, but there is a constant flow of water in and out through its pores. These currents convey nutriment into the interior of the mass, and carry off excretions.

Sponges, like plants, may be multiplied by artificial division, each portion becoming a new individual. Their natural mode of increase, however, is by detaching from themselves little, round, gelatinous bodies, called *gemmules*, which in time become counterparts of the parent.

Some kinds of Sponges are found on almost all shores; and some frequent deep water, whence they can only be obtained by dredging. It is in this manner that the common Sponge is procured from the Mediterranean, the Grecian Archipelago, and the other localities it frequents. Sponges are not confined to the sea, however; for there is a species which inhabits fresh water.

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